

XL PRO²

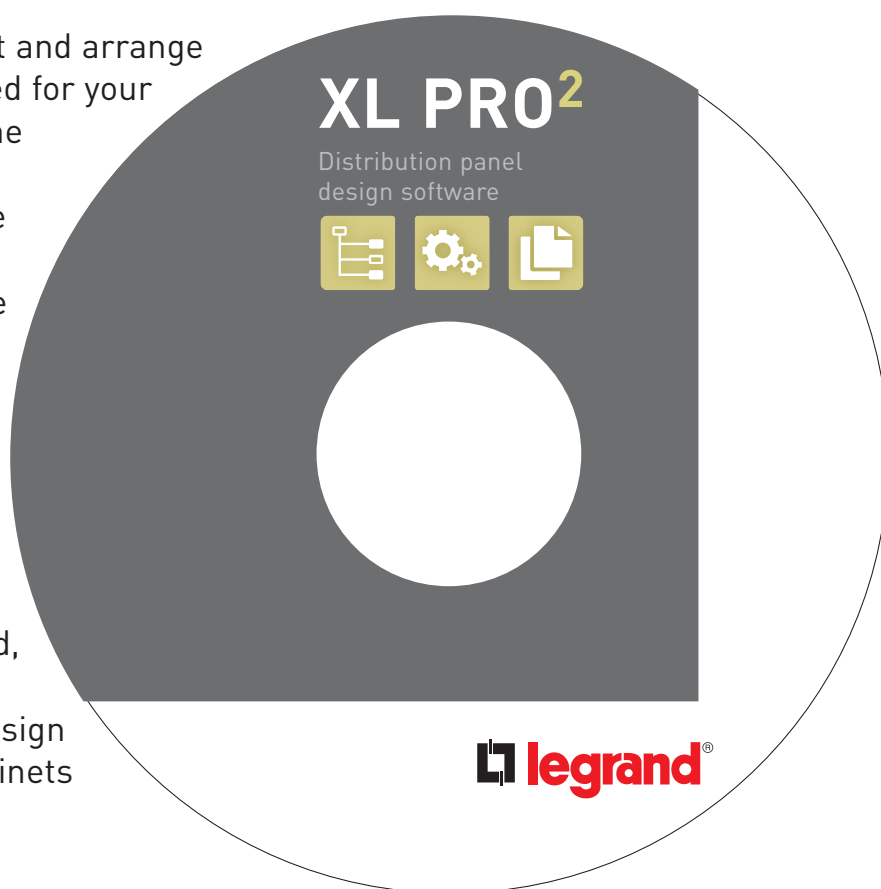
Panel Conception Software



USER MANUAL

XL PRO², a little genius for the creators of distribution panels

■ **XL PRO²** will select and arrange the products you need for your panel or construct the circuit diagram, and automatically choose the right types of enclosures, calculate the costs, draw up the purchase order and draw the circuit and installation diagrams. And as any modifications you make are immediately included, with **XL PRO²** it is simplicity itself to design your distribution cabinets and enclosures.



WARNING/DISCLAIMER

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Installation and start-up

I. Installation

A. Hardware and software requirements

- Intel Pentium IV processor or equivalent running Windows 2000, XP or Windows Vista.
- 512 Mb of RAM recommended.

B. Installation

- Close all open applications.
- Insert the XL PRO² CD-ROM.
- Follow the instructions in the installation program which starts automatically.

C. To unlock

This software is protected. To obtain the key-code, we thank you to contact our XL-Pro² support team on telephone number 02 719 17 11.

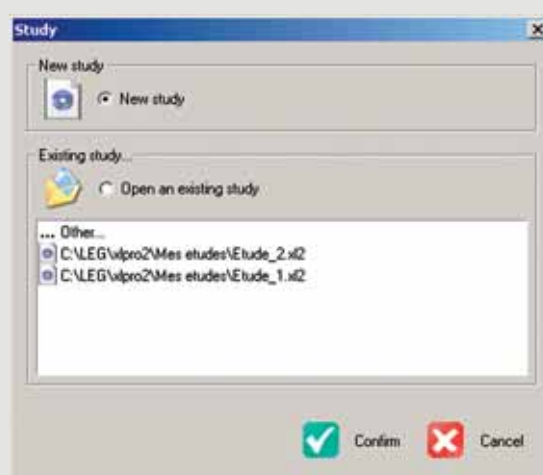
In any case you can open the application 30 times to realise your studies. Afterwards, the software will be blocked and you have to ask your key-code if you want to continue to work with XL-Pro².

II. Start-up

To start XL PRO², double-click on the icon located on the desktop or select XL PRO² in the menu:

Start > Programs > Legrand > Xlpro2

A window will then prompt you to start a new study. Simply click on the **Confirm** button.



If you have already used XL PRO², you can open one of the last 4 previously saved studies by double-clicking on the name of the required study in the list.

Double-click on the line... **Other** to open a study that does not appear in the list, and specify its location in the standard dialogue box for opening a file. When you have made your choice, click on the **Confirm** button to continue starting up XL PRO².

If you create a new study, the **Study properties** window opens so that you can enter information concerning the study and the panels it contains. (a study contains at least one panel).

The **study name** [1] will be allocated when you first save the study (see page 9).

For the study, you can:

- Allocate a **contract number** [2]
- Choose the **creation date** [3]
- Specify the various **participants involved** [4]
- Specify the **customer** [5]
- Choose the **customer's picture** [6] (BMP file).

In the content of study part, you can add **new panels** [7] and for each panel:

- give it a **name** [8]
- specify the **author** of the study [9]
- Specify the **expected Ics** [10].

! WARNING

The selection of the Ics is important as it determines the choice of protection devices and helps calculate the number of busbar supports, and whether or not to incorporate a door.

The expected Ics of the panel is adjusted by moving the cursor with the mouse or using the arrow keys on the keyboard. The suggested values range from 3 kA to 70 kA.

Finally, button [11] is used to access entry of the **name** of the company and the selection of a **logotype**.

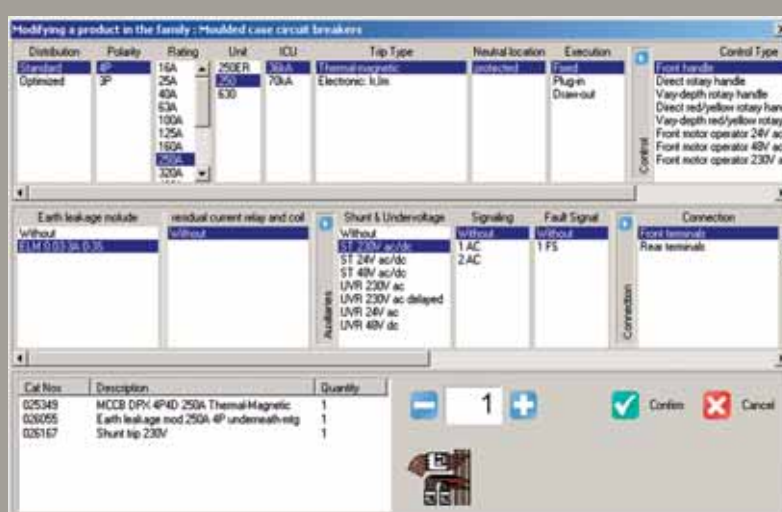
XL Pro² at a glance

The modular design of XL Pro² makes it flexible and intuitive to use. Each module performs a specific task and interacts with the others. You can choose various different ways of working, to suit your preferences and habits: the operations follow on logically after one another.



Parts list

- Choice of the devices and their accessories.
- Automatic definition of the catalogue numbers by selecting the characteristics and options.
- Modifications made to the arrangement or in the circuit diagram are automatically reflected in the parts list.



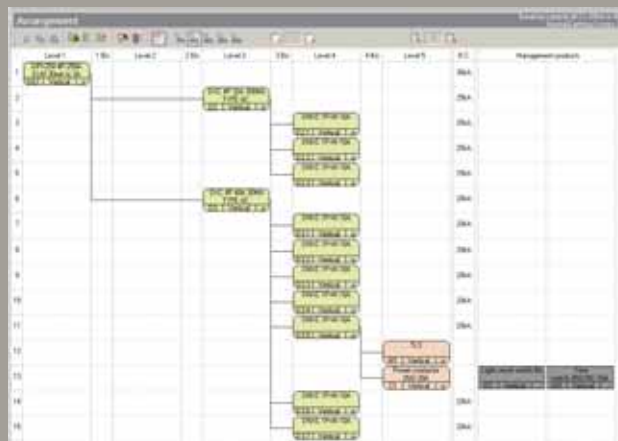
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Arrangement

- Organisation of the products according to the electrical logic of the panel.

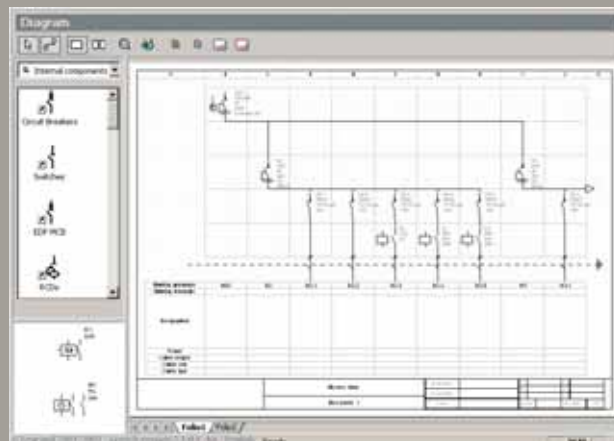
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Circuit diagram

- Automatic drawing of the power diagram according to the arrangement, or full composition of the panel by manually drawing the diagram.
- Manual drawing of the control diagram.

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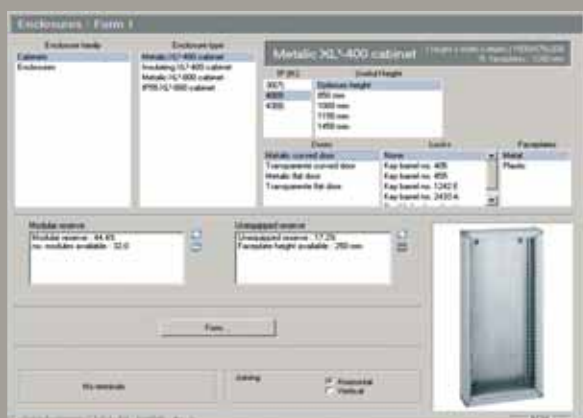




Enclosures

- Automatic definition of the cabinets or enclosures that can take the products you have previously selected.
- Choice of the enclosure model from the combinations that are suggested.

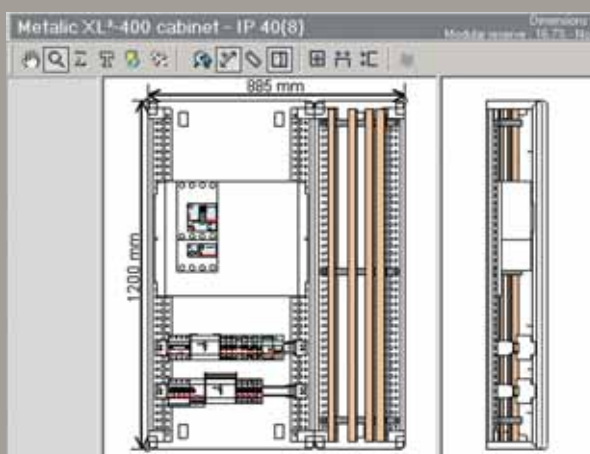
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Preview

- Preview and modification of the panel layout.
- Selection of additional accessories and equipment.

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Panel summary



Project summary



Printing folder

- Costing, purchase order, summaries, etc.
- Printing documents.

→ page 62

Summary - Purchase Order				
Reference	Description	Quantity	Rate U.P.	N°
006564	MCB DIX C 4P 20A	7	91.1000	
009857	Mounting base DFX125 4P	2	72.5000	
009858	Mounting base DFX125 ELM 4P	2	83.5000	
020051	Blanking plates 24 modules	1	4.7300	
020107	Metallic XL 400 cabinet H1200	2	357.0000	
020188	Backplate XL-Part 400 height 1400	1	47.7000	
020201	Support+24 modules rail, fixed	1	14.2000	
020221	Mounting plate DFX 250/630 vertical central position	1	63.0000	
020257	Curved metallic transparent door H1200	2	163.0000	
020300	Metallic front plate 24 modules H 150	1	22.4000	
020310	Metallic front plate 24 modules H 300	3	35.6000	
020321	Metallic front plate DFX250/400 central position H400	1	49.8000	
020340	Metallic solid faceplate H50	2	14.0000	
020341	Metallic solid faceplate H100	1	20.9000	
020342	Metallic solid faceplate H150	1	23.6000	
020343	Metallic solid faceplate H200	1	28.5000	
020344	Metallic solid faceplate H300	1	40.5000	
025049	MCCB DFX 4P40 125A 25KA	2	399.0000	
025538	MCCB DFX 4P40 400A Thermal-Magnetic	1	2460.0000	

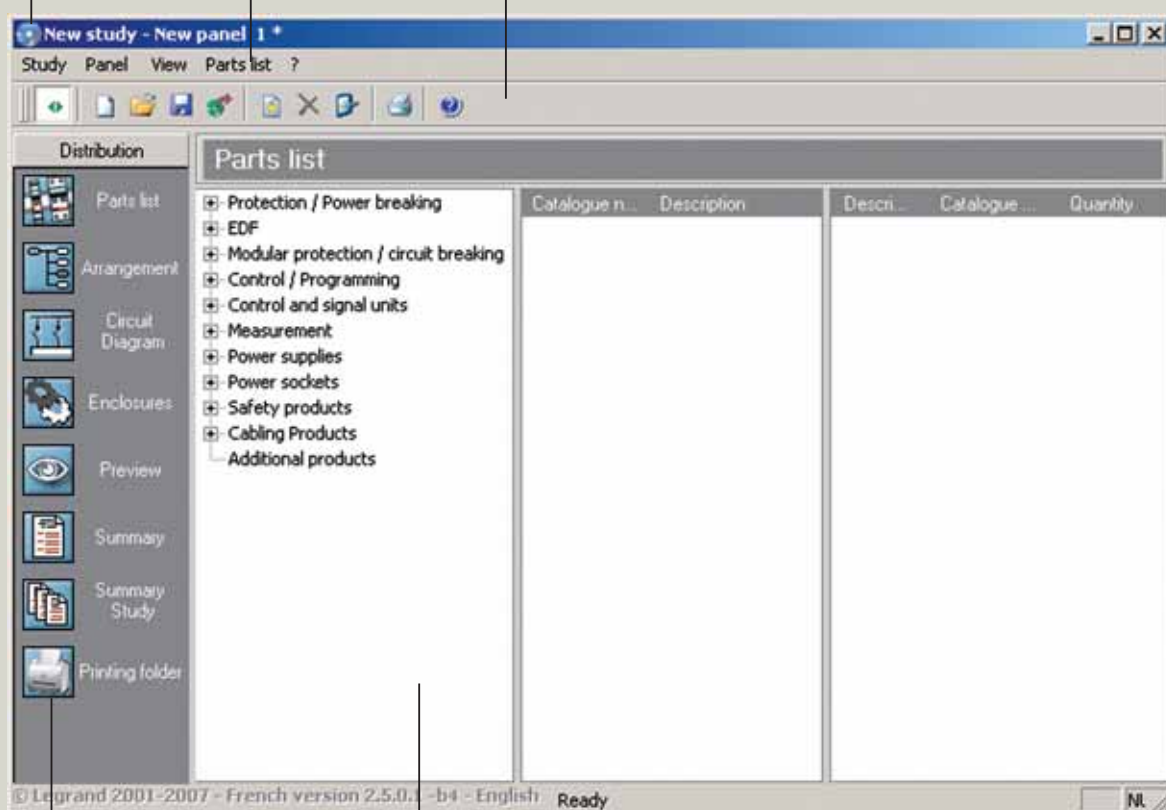
The XL Pro² interface

I. Introduction

TITLE BAR:
name of the study and
name of the current panel

MENU BAR:
see the following pages

GENERAL TOOLBAR:
see page 11



MODULE BAR:
see page 11

WORK AREA:
module being used

II. Menu bar

A. Study Menu

■ **New**: starts a new study. If you have made changes to the current study, XL PRO² prompts you to save them and then opens the **Study properties** window (see page 5).

■ **Open**: opens an existing study. Once you have saved any changes made to the current study, select your file in the standard open window.

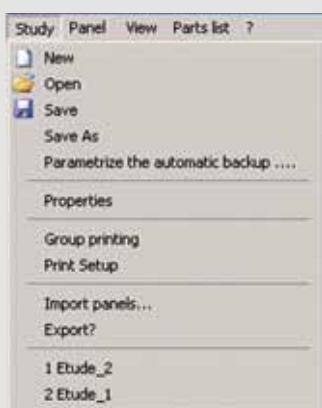
■ **Save**: saves the current study. When you first save the study, the standard **Save** window opens so that you can name the file (this name becomes the name of the study). The default location to which the file is saved is the **My Studies** folder in **XLpro2**, but you can choose another location.

■ **Save As**: saves the current study under another file name and/or to another location.

■ **Parameterize the automatic backup**: enables you to choose how often the file will be automatically saved.

■ **Properties**: opens the **Study properties** window which is used for setting the parameters of the study in the same way as for a new study (see page 5)

■ **Group printing**: opens the **Select documents to print by panel** window, which will be described in detail in the section on the use of the printing folder module (page 71).

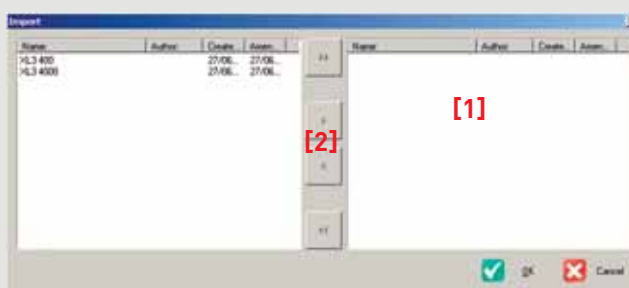


■ **Print Setup**: opens the standard window for selecting the printer and paper.

■ **Import panels...**: adds one or more panels from another study to the current study. The **Open** window is used to select the study containing the panel(s) to be imported.



The Import window is then used to select, in that study, the panel(s) to be imported. The panels you want to import must be transferred to the right-hand pane [1] using the buttons [2].



The >> button transfers all the panels, the > button transfers the selected panel only. If you make a mistake, the panels can be transferred back to the left-hand pane using the << or < buttons. You can also transfer a panel from one side to the other by double-clicking on the relevant line.

Clicking on the **OK** button imports the selected panels which are then added to the content of the current study.

The XL Pro² interface

■ **Export...:** exports the circuit diagram, the preview and the summaries in various file formats (see the modules concerned).

■ **The last 4 studies** opened can be accessed directly.

■ **Exit:** exits XL PRO² after prompting you to save the current study.

B. Panel Menu



■ **New...:** opens the **Panel properties** window to create a new panel in the current study.

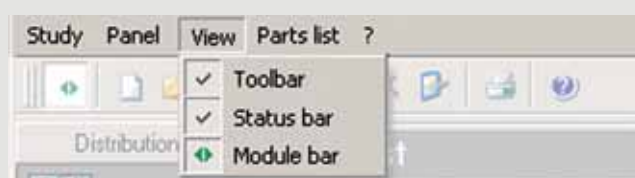
■ **Duplicate current panel:** automatically creates a new panel identical to the current panel. The default name of this new panel is “copy of” followed by the name of the current panel. To rename it, select the **Current panel properties** option in the same menu.

■ **Delete:** deletes the current panel. This option is only active if the study includes more than one panel.

■ **Current panel properties:** opens the Panel properties dialogue box (see page 5).

■ **All panels** in the current study can be accessed directly. The current panel is ticked.

C. View Menu




■ **Toolbar:** displays/hides the toolbar. The meanings of the icons are given opposite.

■ **Status bar:** displays/hides the status bar.

■ **Module bar:** displays/hides the module bar. The module bar is described on the next page.

+ TIP

The module bar can be hidden in order to increase the work area: menu “View > Module bar” or  icon in the toolbar. To display it again, repeat the procedure.

D. Specific Menus

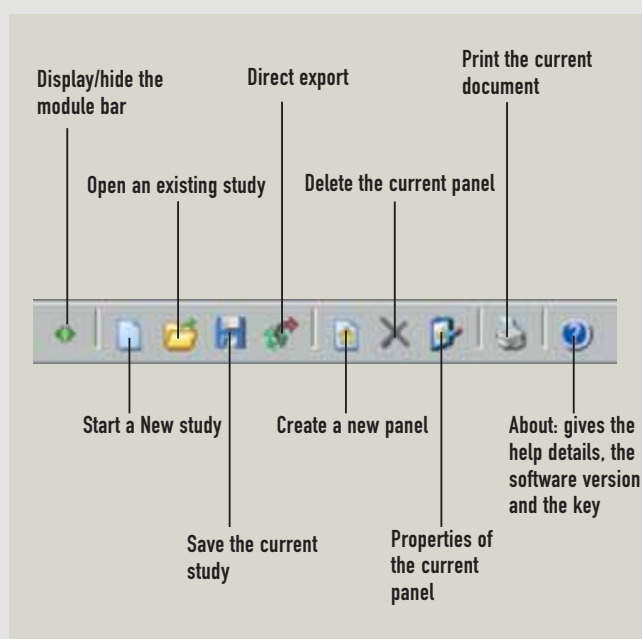
One or more additional menus may be available, depending on the module in which you are working. The menu titles depend on the module currently in use. Their functions will be described in the relevant module sections.

E. ? Menu

This is mainly used to access information on the installed version of the XL PRO² software.

III. Toolbar

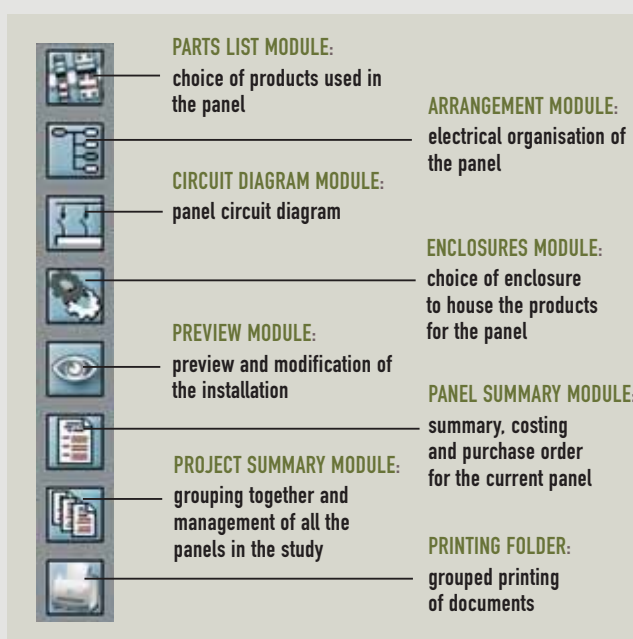
The toolbar contains a series of icons that provide quicker access to certain functions:



For a detailed description of these functions, refer to **Menu bar** on pages 9 and 10.

IV. Module bar

The module bar has a series of icons for accessing the various XL PRO² modules.



The use of each module is described in detail later in the manual.

! WARNING

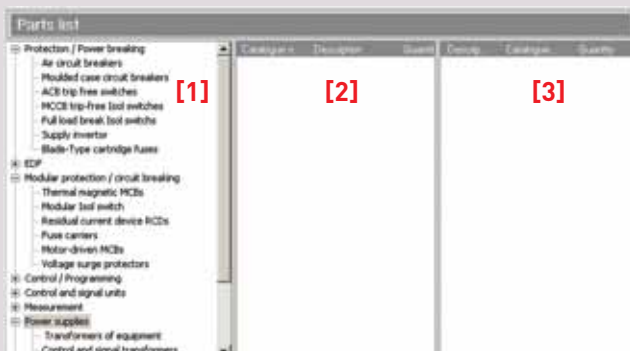
The “Print” tool does not open the “Select documents to print” window. It only works with the Circuit Diagram, Preview, Summary and Project Summary modules and initiates printing of the document shown on the screen.

Parts List module

The parts list module is used to add the products that make up the panel, by selecting their characteristics.

I. Introduction

The **Parts list** module window has 3 panes.



■ **Pane [1]** shows all the products that may be used when designing a distribution panel. They are classified by family and subfamily. To display the content of a family, click on the sign to its left. Click on the sign to hide it again.

■ **Pane [2]**, or the standard list, displays all the panel products in catalogue number order as they are selected.

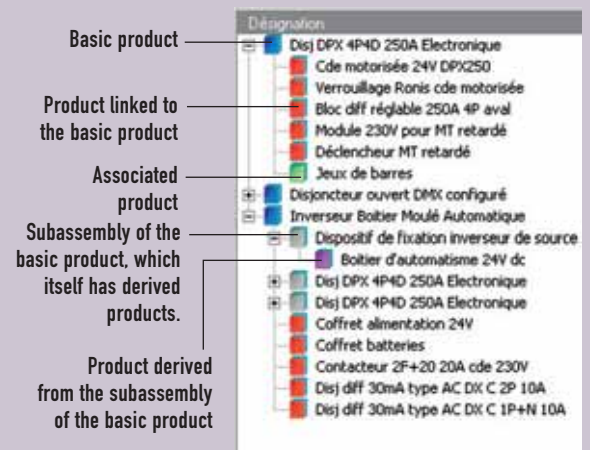
■ **Pane [3]** displays the same products arranged in the order in which they were entered, grouping the secondary products under the main product. To display the secondary products, click on the sign to the left of the main product. This list is described as active as it can be used to make modifications.

The standard list can be hidden by unchecking the corresponding option in the Parts List Menu in the menu bar.

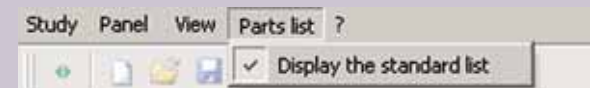
You can then work more easily in the active list (descriptions are not shortened).

+ TIP

The use of colour helps to identify the products.



+ TIP



You can display or hide the second column by clicking on "Display the standard list" in the Parts List. Uncheck to hide.

II. Selecting products

A. Characteristics selection windows

Selecting a subfamily in the first pane will open a window showing the characteristics and options for this type of product and its accessories. This window is different for each subfamily. However, the list of catalogue numbers corresponding to the characteristics and options selected is always shown in the bottom left-hand corner. The and buttons are used to adjust the quantity of products with identical characteristics and options that you want to add to the design of the panel. Click on **Add** to confirm, then on **Close** to change the product type.

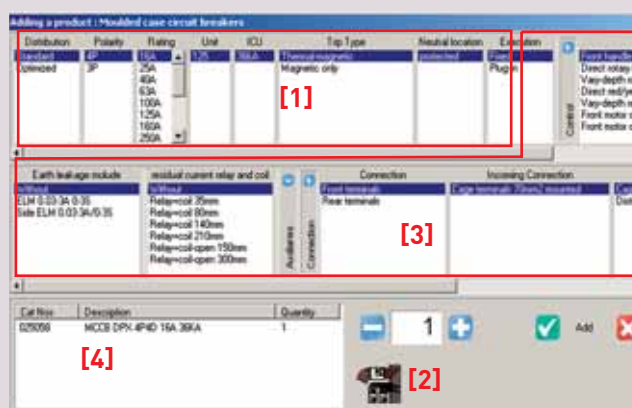
B. Examples of selecting products

1. Selecting an MCCB

In the first pane of the **Parts list** window, open the **Protection/Power breaking** family. MCCBs are spread across several subfamilies: **Air circuit breakers**, **Moulded case MCBs** and **Supply inverters** corresponding respectively to the DMX and DPX ranges mounted on their own or mounted with supply inversion. The latter case is described in more detail on page 78.

The method described here for a moulded case MCB is also valid for air circuit breakers, although the characteristics selection window is not completely identical.

Select the subfamily **Moulded case circuit breakers**.



The characteristics selection window is divided into several parts. The first columns **[1]** concern the MCB itself. The default context of the MCB is standard distribution, symbolised by drawing **[2]**. But in the connection column you can also choose optimised distribution (see XL-Part page 74).

The next columns **[3]** concern the choice of the type of Control, the Module, the Auxiliaries, the Connection method, the Accessories and factory assembly.

The summary **[4]** displays the catalogue number of the main product and all the catalogue numbers of the associated products you have chosen.

TIP

To help you select products, the following columns: **Control, Module, Auxiliaries, Connections and Accessories**, can be displayed in full or reduced, by simply clicking on the button located on the caption block.

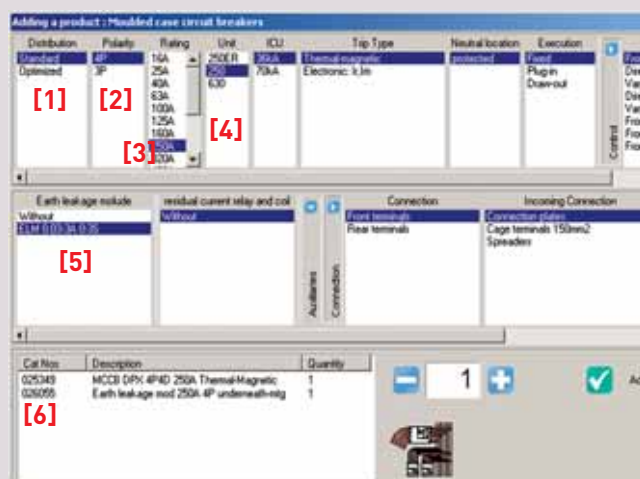
Parts List module

The various options must be selected in the order in which they appear (from left to right and top to bottom). You must therefore start by choosing the connection, the number of poles in the MCB, its rating and then the type of case, the breaking capacity and the type of release required, and so on, until you reach the accessories.

The options available in each column vary according to the choices made in the preceding columns: and are an exact reflection of the Legrand offer.

■ Selecting a main device for a 250 A panel

The first option at the top of each column is selected by default. The device shown in the list of catalogue numbers is a **DPX 125 4P 16 A**.



- In the **Connection** column leave the standard option [1]
- In the **Polarity** column leave the option **4P** [2]
- In the **Rating** column select **250 A** [3]
- Change the **Unit** by selecting **250** in the corresponding column [4]. The catalogue number is updated and becomes 025349 [6]
- In the next 6 columns leave the basic default options unchanged.

■ Adding an earth leakage module

- In the **Module** column, select: **Module mounted underneath 0.03-3A/0-3S** [5], which is the only available module for this model
- It immediately appears in the list with catalogue number 026055 [6]
- Leave the default options in the subsequent columns and the quantity at 1.
- Click on ☒ **Add** and finally on ☒ **Close**

The catalogue numbers have been added to the standard list [7].

Only the MCCB appears in the active list. Clicking on the sign shows the earth leakage module attached to the device [8].



2. Selecting modular MCBs (standard connection)

Open the **Modular protection/circuit breaking** family and select the **Thermal magnetic MCBs** subfamily.

The type of connection, number of poles and rating are always selected first when defining the characteristics.



! WARNING

Lexic with automatic terminals*: see page 72.

XL-Part optimised distribution*: see page 74.

*depends on the product offer locally displayed

■ Selecting an RCBO for a cluster of lighting circuits

- In the **Connection** column leave the **standard** option [1]
- In the **Polarity** column select **4P** [2]
- In the **Rating** column select **32 A** [3]

! WARNING

The most frequently used ratings appear at the top of the list, in ascending order.
The least used ratings are at the bottom of the list.

- In the **Type** column select **C** [4]
- In the **Earth leakage module** column select **300 mA single-piece** [5]

Distribution	Polarity	Rating	Type	ICU
Standard [1]	1P+N Left	6A	C	6000A/10kA
Optimized	2P	10A	B	10000A/15kA
Automatic	3P	13A	D	50kA
	4P	16A	Z	
	1P	20A		
		25A		
		32A [3]		
		40A		
		50A		

Type	Earth leakage module	Shunt & Undervoltage	Signaling contacts
Without	30mA single-piece	Without	Without
AC	300mA single-piece	ST 110 to 125V dc	1 AC
A	300mA add-on	ST 110 to 415V ac	2 AC
Hpi	300mA add-on	ST 12 to 48V ac/dc	3 AC
	300mA selective add-on	UVR 230V ac (0-300ms)	4 AC
	1A selective add-on	UVR 24V dc (0-300ms)	
		UVR 48V dc (0-300ms)	

- Leave the quantity at 1, then Click on ☒ Add

■ Selecting phase + neutral MCBs for lighting circuits

- In the **Rating** column select **10 A** [1]
- Leave all the other options at their default values

Distribution	Polarity	Rating	Type	ICU	Standards
Standard	1P+N Left	6A	C	6000A/10kA	IEC 60898/347-2
Optimized	2P	10A [1]	B	6000A/10kA	
Automatic	3P	13A	D		
	4P	16A	Z		
	1P	20A			
		25A			
		32A			
		40A			
		0.5A			
		1A			

Type	Earth leakage module	Shunt & Undervoltage	Signaling contacts	Fault signal
Without	Without	Without	Without	1 Out
AC		ST 110 to 125V dc	1 AC	1 Cno
A		ST 110 to 415V ac	2 AC	2 Out
Hpi		ST 12 to 48V ac/dc	3 AC	2 Cno
		UVR 230V ac (0-300ms)	4 AC	Intern
		UVR 24V dc (0-300ms)		
		UVR 48V dc (0-300ms)		

- Change the quantity to 3, then click on ☒ Add

■ Selecting an RCBO for power socket circuits

- Select 1 **4P, 40 A, AC, 30 mA** RCBO, as shown below

Distribution	Polarity	Rating	Type	ICU	Standards
Standard	1P+N Left	6A	C	6000A/10kA	IEC 60898/347-2
Optimized	2P	10A	B	10000A/15kA	
Automatic	3P	13A	D	50kA	
	4P	16A	Z		
	1P	20A			
		25A			
		32A			
		40A			
		50A			

Type	Earth leakage module	Shunt & Undervoltage	Signaling contacts	Fault
Without	30mA single-piece	Without	Without	Without
AC	300mA single-piece	ST 110 to 125V dc	1 AC	1 FS
A	300mA add-on	ST 110 to 415V ac	2 AC	
Hpi	300mA add-on	ST 12 to 48V ac/dc	3 AC	
	300mA selective add-on	UVR 230V ac (0-300ms)	4 AC	
	1A selective add-on	UVR 24V dc (0-300ms)		
		UVR 48V dc (0-300ms)		

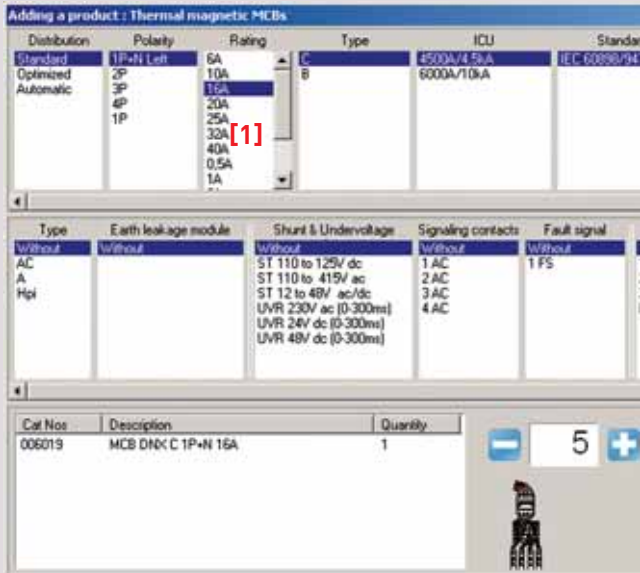
- Leave the quantity at 1, then Click on ☒ Add

Parts List module

16

■ Selecting phase+neutral MCBs for power socket circuits

- In the **Rating** column select **16 A** [1]
- Leave all the other options at their default values



- Change the quantity to 5, click on ☒ **Add**, and then on ☒ **Close**

All the products added are shown in the parts list together with their selected quantities.

Catalogue n...	Description	Quantity	Description
006017	MCB DNX C 1P+N 10A	3	MCB DNX C 1P+N 10A
006019	MCB DNX C 1P+N 16A	5	MCB DNX C 1P+N 16A
007980	RCBO 300mA AC Type ...	1	RCBO 300mA AC Type ...
008013	RCBO 30mA Type AC DX...	1	RCBO 30mA Type AC DX...
025349	MCCB DPX 4P4D 250A T...	1	MCCB DPX 4P4D 250A T...
026055	Earth leakage mod 250A ...	1	Earth leakage mod 250A ...

3. Selecting control and and programming products

The products in the **Control/ Programming** family are used to control and automate the functions of the installation.

■ Selecting a timer

- In the **Control/Programming** family select **Timers**
- Leave all the default options unchanged

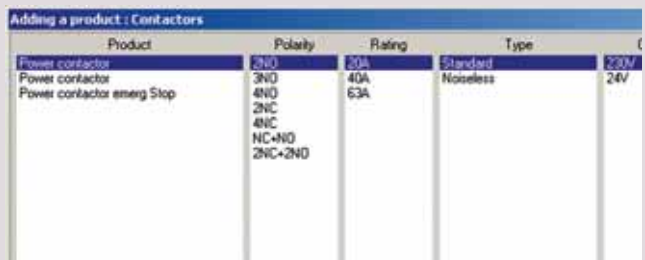


- Click on ☒ **Add**, then on ☒ **Close**

■ Selecting power contactors

We want to automate 2 circuits for external lighting

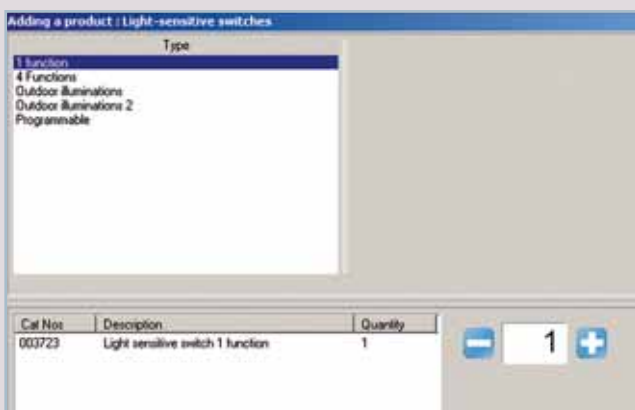
- In the **Control/Programming** family select **Contactors**
- Leave all the default options unchanged



- Click on ☒ **Add**, then on ☒ **Close**

■ Selecting a light sensitive switch

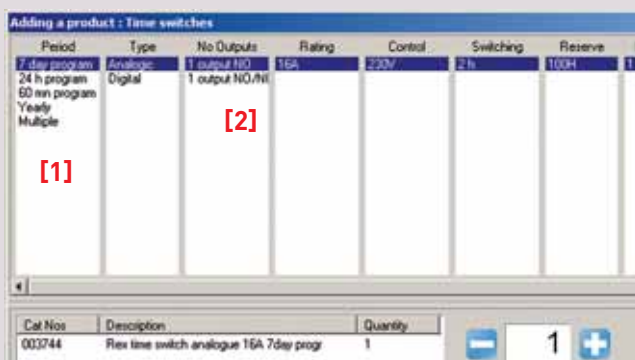
- In the **Control/Programming** family select **Light sensitive switches**
- Leave all the default options unchanged



- Click on ☒ **Add**, then on ☒ **Close**

■ Selecting a digital time switch

- In the **Control/Programming** family select **Time switches**
- In the **Period** column select **Multiple [1]**
- In the **No. of outputs** column select **2 NO/NC outputs [2]**
- Leave the other default options unchanged



- Click on **Add**, then on **Close**

4. Selecting a cabling product

The **Cabling products** family is mainly used to select distribution blocks, busbars and output terminals.

Distribution blocks and busbars can be selected in two ways:

- Either a busbar or a distribution block is used on its own
- Or a busbar or a distribution block is used with a product that has already been selected.

The latter solution has several advantages:

- The characteristics of the busbar will be calculated very precisely according to those of the associated device
- The busbar will be geographically positioned in the enclosure in relation to the device
- The bars and supports will be calculated automatically according to the mounting type selected and the prospective Isc indicated at the outset.

! WARNING

Selecting a distribution block or a busbar:
see page 26.

Automatic calculation of the output terminals:
see page 29.

! WARNING

The prospective Isc and the characteristics of the device with which the busbar is associated give a peak Isc (Ipk) that is calculated automatically.

Parts List module

III. Modifications

The active list is used to make corrections to the parts list. If the names of the products are truncated, you can hide the standard list to free up more space on the screen (see page 12). Right-click on the product you want to change, then select the required operation in the popup menu.



A. Changing the quantity

To change the quantity of identical products, select **Quantity**, then use the **-** and **+** buttons to set the new quantity required. The cursor or the keyboard (direction arrows) can also be used.

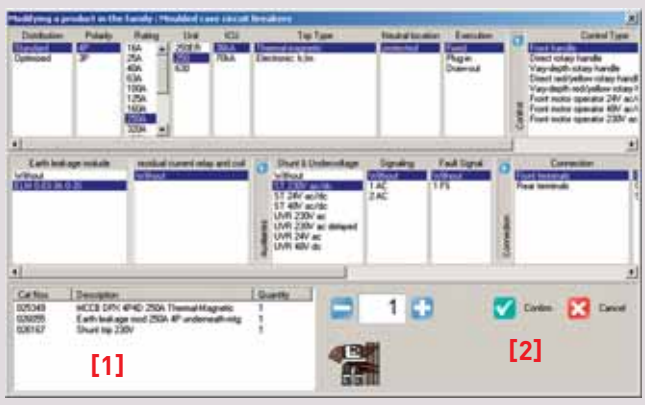


- **Adding 2 additional MCBs for lighting circuits**
 - Right-click on the line **DNX C 1P+N 10A MCB** in the active list
 - Select **Quantity** in the popup menu
 - Change the quantity to **5**
 - Click on the **Confirm** button
- The new quantity immediately appears in the last column in the list.

B. Changing characteristics and options

1. Changing a device

To change the characteristics and options of a device, select **Modify** in the popup menu. The changes are made in a window which is identical to the **Add a product** window. The list of catalogue numbers **[1]** reflects the changes made. The **✓ Add** button is replaced by the **✓ Confirm** button **[2]**.



! WARNING

You can make as many changes as you want, but, as is the case when adding a product, the subsequent columns can be reset if the options that were previously chosen are no longer compatible with the modifications.

Check your data carefully before confirming it.

+ TIP

The “Quantity” field can be used to adjust the number of products to be modified. Thus, if the parts list of your panel contains several identical products, it is possible to change only some of them by adjusting the quantity required before confirming the operation. By default, the quantity is set to the total number of products.

■ Adding an auxiliary to a DPX MCB

To install an emergency circuit breaking device for the entire panel, the main device must be fitted with a release.

- Right-click on the line **DPX 4P 4D 250 A MCB** in the active list
- Select **Modify** in the popup menu
- In the **Shunt & undervoltage auxiliaries** column select a **Shunt 230V ac/dc** coil
- Click on the ☒ **Confirm** button.

If you return to the list of products in the **Parts list** module and click on the to the left of the MCB you can see that the release has been added.

Description	Catalogue	Quantity
MCB DPX 4P...	025349	1
Earth leak...	026055	1
Shunt trip...	026167	1
RCBO 300mA...	007960	1
MCB DNK C 1...	006017	5
RCBO 30mA T...	008013	1
MCB DNK C 1...	006019	5
Time-lag switc...	004702	1
Power contac...	004049	1
Light sensitive...	003723	1
Multifunctional...	004771	1

2. Changing a busbar

In the same way, right-clicking on a cabling product enables you, as with any other product, to **Modify** its characteristics and also to **Delete** the association. Details of how to select a distribution block/busbar are given on pages 17 and 26.

C. Deletion



To delete one or more products, select **Delete** in the popup menu. In the window that appears, adjust the number of products you want to remove then click on the ☒ **Delete** button.

+ TIP

It is not possible to delete an associated product or an accessory directly, as this operation would delete the main product. The latter forms a whole together with its associated products. The **Modify** option must be used to perform this type of operation.

! WARNING

Remember to configure automatic saving in the Study menu > Configure auto saving

Arrangement module

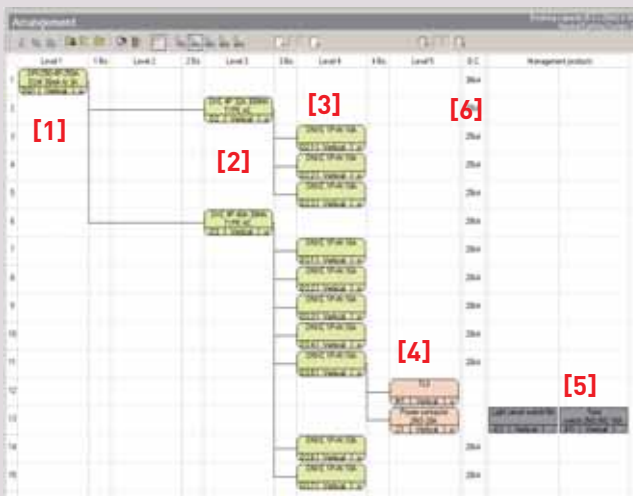
The Arrangement window shows the electrical organisation of the panel in the form of a tree structure. The products are represented by tiles arranged in the boxes of a table.

I. Introduction

Each column in the arrangement represents one distribution level.

XL PRO² arranges the devices in the following way:

- **Main devices [1]** at level 1
- **Power devices and residual current protection devices [2]** at level 3
- **Secondary protection [3]** at level 4
- **Control devices [4]** at level 5



No devices are placed at level 2, apart from supply inverters (see page 78).

This column can be used, for example, to add an **additional product**. Moving devices from level 3 to level 2 only affects the appearance of the circuit diagram.

The narrow columns between the levels are for **busbars** and **distribution blocks**.

Each device is connected to the first device on the next level, which is on the same line or above it. The root of the tree structure can be a breaking device

(switch or MCB) or a distribution device (distribution block or busbar).

The last columns are reserved for **management products [5]**, which are not usually included in the power circuits (programming, signalling, etc). For example, XL PRO² will automatically place a light sensitive switch in these columns (this type of device usually controls a contactor). If the device has to directly power a lighting circuit, move it to level 5. It then becomes a control product and is automatically inserted in the tree structure.

The number of columns for management products can be adjusted according to requirements (from one to five) see page 23.

The **B.C.** column [6] shows the breaking capacities resulting from joining devices to higher level devices if they exist. If there are no higher level devices, the breaking capacity of the lone device is shown.

+ TIP

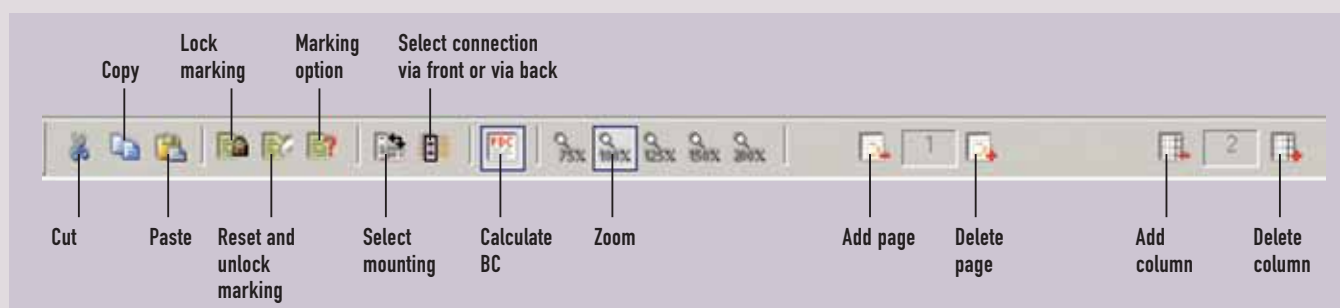
When a value appears in red in the B.C. column it means that it is lower than the Isc value defined for the panel (see page 5), indicating that the wrong characteristics have been selected.

! WARNING

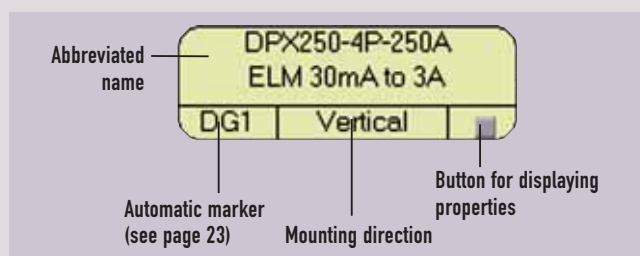
Special cases of automatic connections and optimised distribution:

- Lexic with automatic terminals: see page 72
- XL-Part optimised distribution: see page 74.

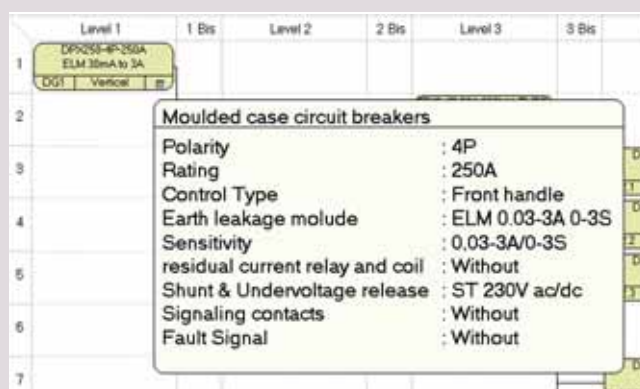
A. Toolbars



B. Representation of the products

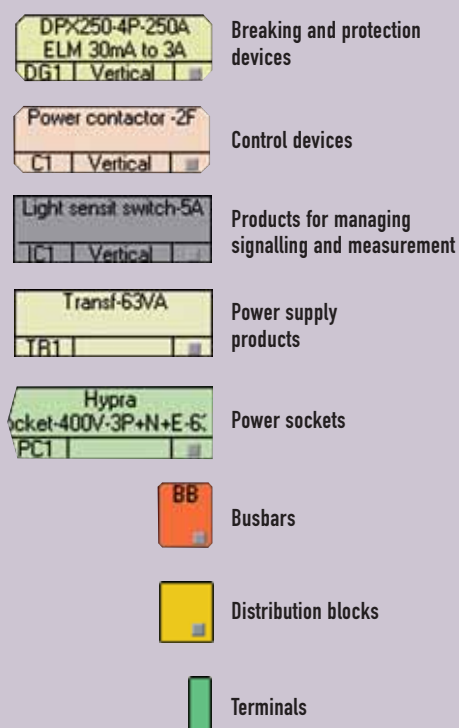


The detailed characteristics of each product can be displayed by right-clicking and selecting the **Properties** option in the popup menu, or clicking on the button at the bottom right of the products.



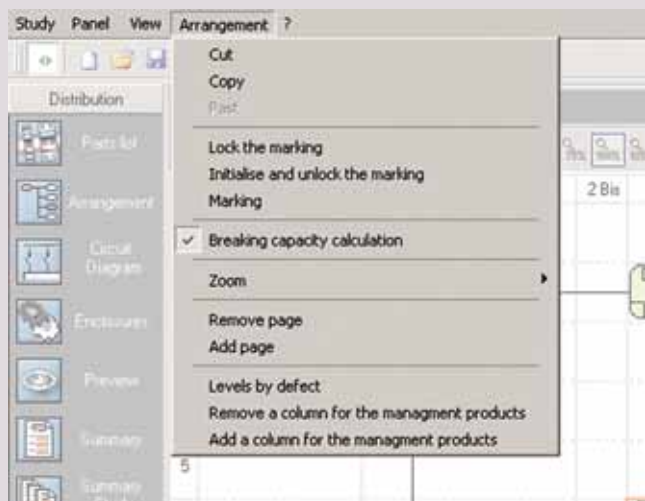
+ TIP

The colours and shapes of the tiles help to identify the products



Arrangement module

C. Arrangement Menu

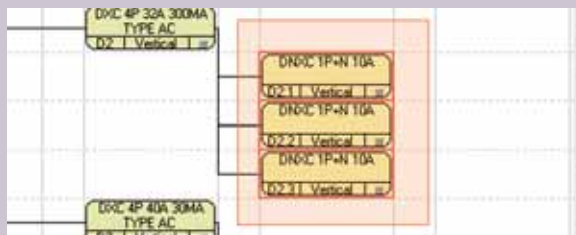




1. Cut, Copy, Paste

To access these three functions you must have selected at least one product.

+ TIP

To select several products at once, draw a box round your selection by dragging the mouse while holding down the left-hand button.

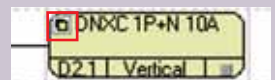
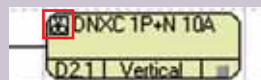


To **cut** or **copy** one or more products, make your selection then choose the operation in the menu or the toolbar:  or . By default, when you **paste** products, they are inserted on the last line of the arrangement.

If you want to paste them to another location, right-click to select the required position then select **Paste** in the pop-up menu.

+ TIP

Cut or copied products are indicated by the corresponding icon.



To move a product see also pages 24 and 25.

2. Marking

! WARNING

By default, the numbering applied to markers follows the order in which the devices are arranged. When a device is moved, the markers are automatically updated. This may be inconvenient if you want to make changes to a panel for which you have already created labels with markers.

■ Lock marking

Locking the marking allows you to maintain the validity of the labels by fixing the markers of all the devices in the panel. It is also possible to lock the markers individually for each device (see page 31).

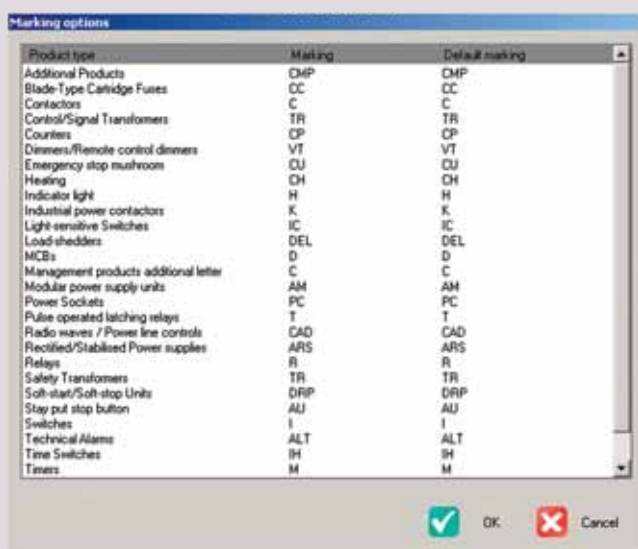
■ Initialise and unlock marking

There are two possible options:

- **Default marking** immediately resets all the markers according to the arrangement of the devices.
- **Unlock only** keeps the markers as they are, provided that no changes are made to the arrangement.

■ Marking options

This option is used to choose the letters which automatically identify each type of product.



To change the marking for a given type of device, double-click on its current marker and enter the new marking.

+ TIP

It is also possible to customise the markers individually for each device (see page 31).

3. Breaking capacity calculation

Displays the breaking capacities in the arrangement (see page 20)

4. Zoom

Select the reduction or enlargement ratio required in the submenu.

5. Pages

The arrangement table is subdivided into 16-line pages and the number of pages is adjusted automatically in accordance with the number of products. You can **add** or **remove** blank pages to improve the appearance of the presentation.

6. Management products

Management products are positioned in the last columns of the arrangement. The **Remove/Add a column for the management products** options, or their equivalents in the toolbar, can be used to adjust the number of columns.

It is therefore possible to have up to 5 management devices on the same line, and thus in the same circuit. This avoids having to add additional lines, which could affect the presentation of the circuit diagram (see page 32).

25kA			
25kA	Light sensit switch-5A IL1 Vertical	Time switch-2NO/NC-16A IH1 Vertical	Time switch-1NO-16A IH2 Vertical
25kA			
25kA			
20kA			

Arrangement module

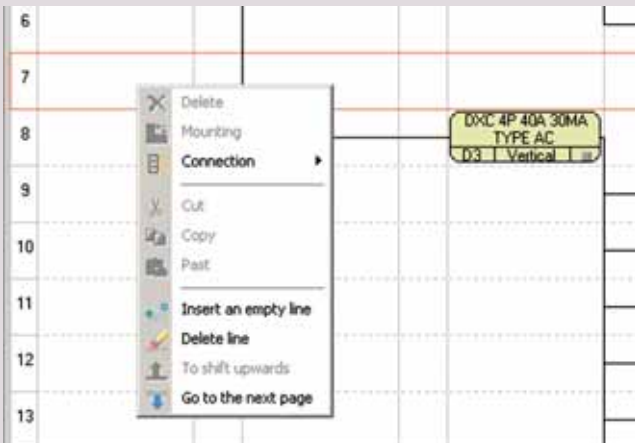
II. Use

A. Organising the panel

1. Insert/Delete lines, page break

To access the appearance options of the arrangement table:

- Right-click on an empty box in the required location
- Select the option you require in the popup menu.



The new lines are inserted above the selected line. Only empty lines can be deleted.

The **Go to the next page** option (popup menu) automatically creates a new page if required.

To add or delete a page, select the option in the **Arrangement** menu or the corresponding icon in the toolbars.

2. Moving products

+ TIP


The products are initially arranged in the order in which they were entered in the Parts list. If they were entered following the electrical logic, from the main device to the terminal circuits, very few changes will be necessary.

Products can be arranged manually in two ways.

Directly moving them with the mouse

- Left-click to select the product(s)
- Drag them holding the mouse button down
- Release them at the required position

Moving them using Cut and Paste

- Left-click to select the product(s)
- Click on the  **cut** icon in the toolbar
- Right-click on the required position (the box must be empty)
- Select **paste** in the popup menu

! WARNING

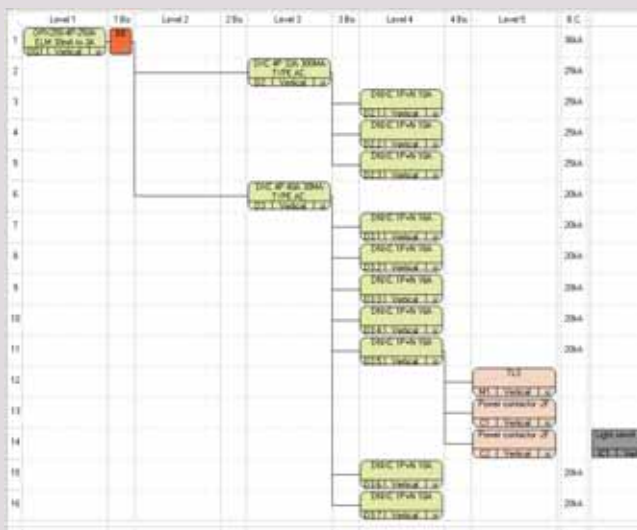
If you do not select where the products are to be pasted, they will be positioned on the last line of the arrangement.

+ TIP

To select several products at once, drag the mouse while holding down the left button. If the products are not next to one another hold down the Ctrl key and click on each product in succession.

■ Arranging the panel

If you have followed the previous examples step by step (pages 13 to 17), the tree structure of your panel should look like the one shown below.



Only the timer, contactors and the last MCBs added are not in their places in the tree structure. The two 10 A MCBs are placed on the last two lines.

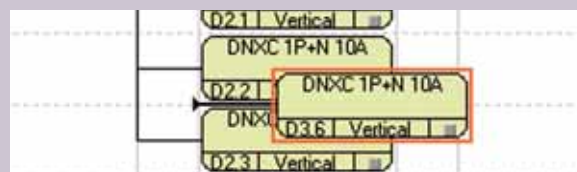
In this example, if you want to insert the MCBs at the end of the lighting circuit, you must first insert 2 blank lines above the **DX C 4P 40 A 30 mA**:

- Right-click in an empty box, on the RCBO line
- In the popup menu, select the **Insert an empty line** option
- Repeat the operation to insert a second line
- Select the 2 MCBs
- Drag them to their positions with the mouse

+ TIP

Automatic insertion without having previously created blank lines:

- Select the products to be moved
- Drag them to the required position with the mouse: an insertion mark shows where the products will be inserted.

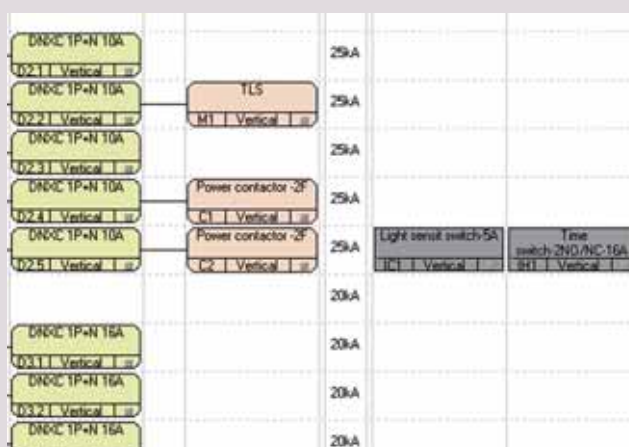


- Release the mouse button
- The products located below this position automatically move down.

Items can only be automatically inserted between two boxes which are already occupied.

To complete the arrangement of the panel:

- Move the timer and the 2 contactors up so that they are opposite the lighting circuits.
- Place the time switch and the light sensitive switch on the same line as the last contactor.



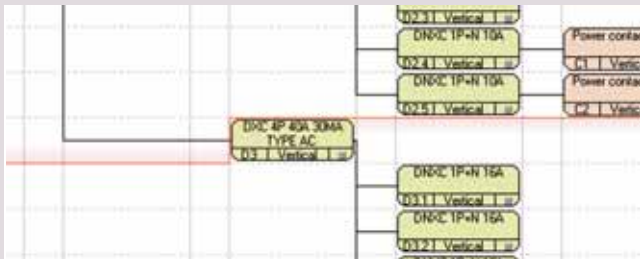
3. Break lines

By default the products will be installed in the enclosure one after the other in the order of the arrangement. Using the Break lines option, a device and all those after it can be made to move to the next row down or to the next enclosure (or box).

A break line is symbolised in the arrangement by a horizontal line. To cancel it, select the **Without** option.

Example

- Right-click on the **DX 40 A 30 mA**
- Select the **Break line** option, then **Row**.



Break lines are only fully displayed in the **Preview** module (see page 50). They do however influence the choice of enclosure.

B. Adding cabling products

! WARNING

Apart from the associated distribution blocks and busbars, products can only be directly added in the Arrangement module using copy and paste.

To select a new product, you must go back to the Parts list module.

It is also possible to use the Circuit diagram module (see page 40).

1. Selecting an associated busbar or distribution block

The **Legrand** distribution offer can be found in the **Cabling products** family, which includes busbars, modular distribution blocks, power distribution blocks and terminals. The **Associated busbars and distr. units** subfamily is used to join the distribution product to the device which is to power it. The choices that appear in the **Enter a product** window take the characteristics of the device into account. The distribution product will appear connected to the main product in the active list.

Power contactor -2F	004056
Light sensitive switch 1 function	003723
Multifunctional digital timer 2X16A	004771
MCCB DPX 4P4D 250A Thermal-Ma...	025349
Earth leakage mod 250A 4P un...	026055
Shunt trip 230V	026167
Busbar	BB
RCBO 30mA Type AC DX C 4P 40A	008013

! WARNING

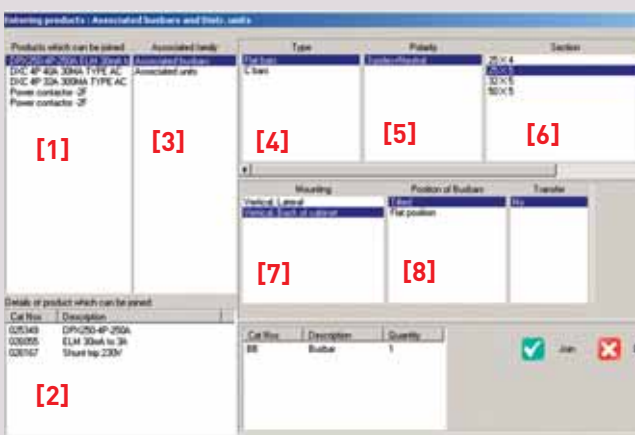
When the characteristics of a device are changed, the associated busbar or distribution block is deleted if it is no longer compatible with the device (a warning appears on the screen). After confirming the changes, you must therefore remember to restart the procedure for selecting the associated distribution product if necessary.

■ Selecting an associated busbar in the parts list module

- In the **Cabling products** family select **Associated busbars and distr. units**

Only panel devices that can be connected to the output of a distribution product are shown [1]

- Select the DPX 250. The **Details of product which can be joined** pane [2] shows the full composition of the selected product



- In the second column, select **Associated busbars** [3]

- Select **flat** [4] busbar type

- As the device has 4 poles, only the **3-pole + Neutral** [5] type is suggested

- For the cross-section of the bars, select the option **25 x 5** [6], which corresponds to 270 A with IP > 30 and 340 A with IP = 30

- In the subsequent columns, select: **Mounting: Vertical, Back of cabinet** [7] and **Position of busbars: Tilted** [8]

- Click on ☒ **Join** then on ☒ **Close**.

! WARNING

These options cannot be used to add a transfer busbar, as this is only available with a horizontal or side-mounted vertical busbar with bars mounted “edgewise”.

! WARNING

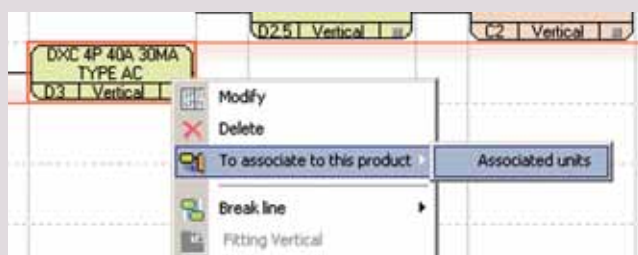
The parts list only shows “Busbar”, with no other details. The catalogue numbers that make up the busbar will only be added to the overall parts list once the enclosure has been chosen.

Catalogue n°	Description	Quantity	Description
003723	Light sensitive switch 1 function	1	RCBO 300mA AC Type DVC 4P 32A
004056	Power contactor -2P	2	MCB DVC C 1P+N 10A
004702	Time-lag switch 16A 230V	1	MCB DVC C 1P+N 16A
004771	Multifunctional digital timer 2x16A	1	Time-lag switch 16A 230V
006017	MCB DVC C 1P+N 10A	5	Power contactor -2P
006019	MCB DVC C 1P+N 16A	5	Light sensitive switch 1 function
007980	RCBO 300mA AC Type DVC C 4P 32A	1	Multifunctional digital timer 2x16A
008013	RCBO 30mA Type AC DVC C 4P 40A	1	MCB DVC 4P40 250A Thermal-Ma...
025349	MCB DVC 4P40 250A Thermal-Magnetic	1	Earth leakage mod 250A 4P un...
026055	Earth leakage mod 250A 4P underneath	1	Shunt trip 230V
026167	Shunt trip 230V	1	Busbar
BB	Busbar	1	RCBO 30mA Type AC DVC C 4P 40A

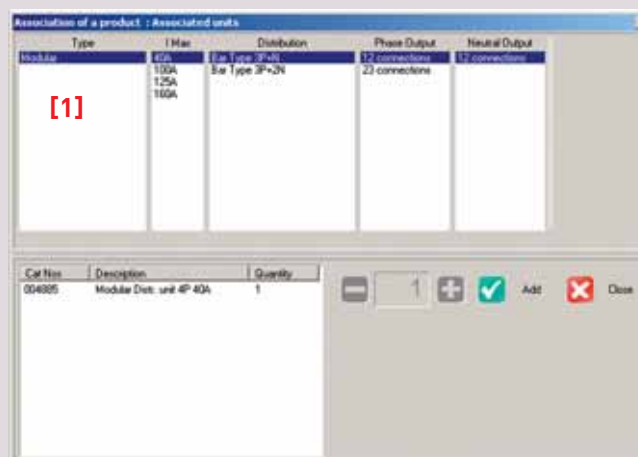
Arrangement module

■ Selecting associated distribution blocks in the arrangement module

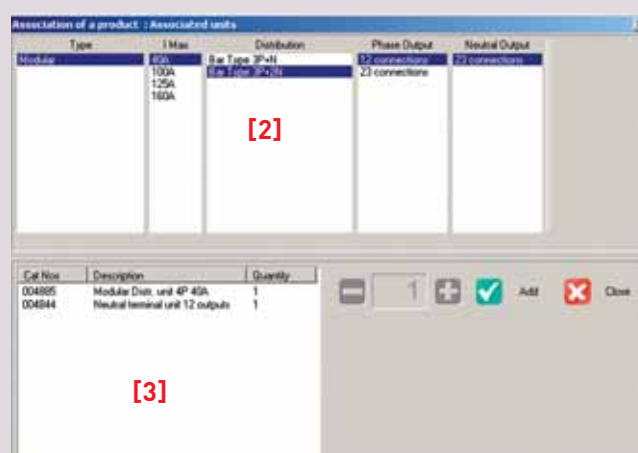
- In the arrangement, right-click on the **DX 32 A 300 mA**



- Select **To associate to this product > Associated units**



- As the MCB is a modular device, the only type suggested is **Modular** [1]
- Leave the other characteristics at their default values then click on **Add**
- Follow the same procedure for the **DX 40 A 30 mA** MCB, but in the **Distribution** column, select: **Bar Type 3P+2N** [2]
- A neutral terminal block with 12 outputs is attached to the distribution block, as can be seen in the catalogue numbers pane [3].



Returning to the **Arrangement** module now shows that the distribution products have been added in columns 1 bis and 3 bis. They are directly connected to the output of the device they are joined to and they power the downstream devices.



2. Selecting a lone busbar or distribution block

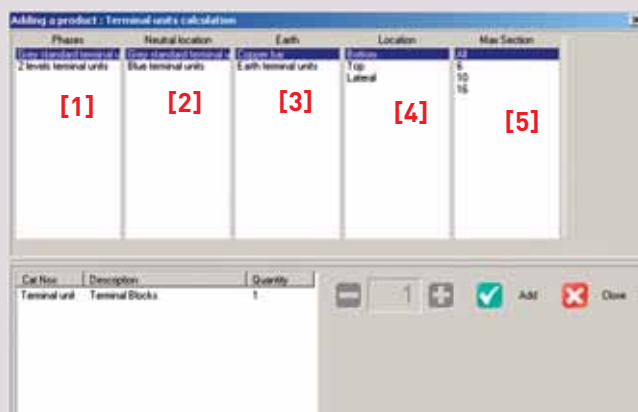
The **Busbar** and **Distribution block** subfamilies can be used to add a busbar or distribution block without joining it to a specific device.

There is no restriction in the choice of products, but you must check compatibility with the panel yourself. Selecting the characteristics is identical to the procedure for associated busbars and distribution blocks.

3. Terminal block calculation

XL PRO² can automatically calculate the output terminals required in accordance with the panel configuration:

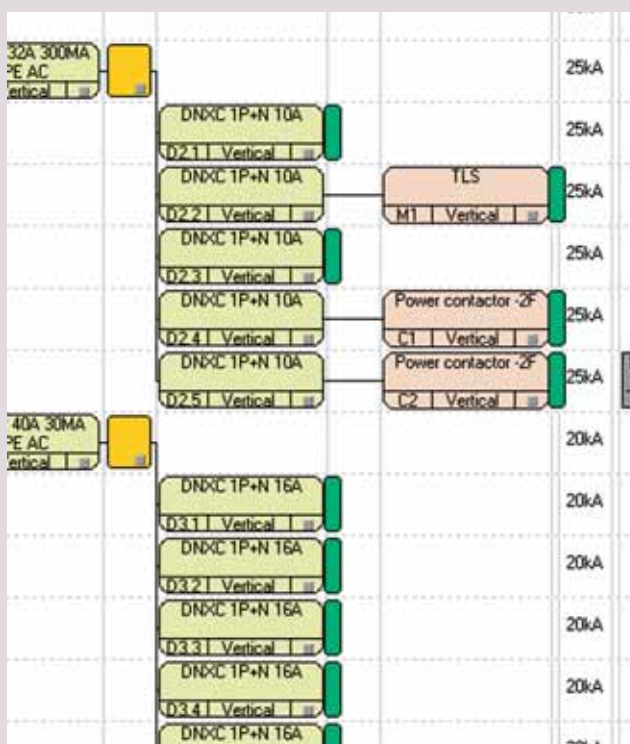
- In the Parts list module, select **Terminal units calculation** in the **Cabling products** family
- Select the type of terminal required for phases [1] and then for neutral [2]
- For earth, you can choose between copper bars or green-yellow terminals [3]
- Select the location in the enclosure [4] and the maximum cross-section [5].



XL PRO² will not suggest terminals for cross-sections greater than the cross-section chosen, given that these outputs will be directly connected to the device.

As is the case for busbars, no catalogue number appears on the **Terminal block** line in the **Parts list**. The products will only be added to the overall parts list when the full composition of the panel is known and the enclosure has been defined.

In the **Arrangement** module, the terminals are represented by a green rectangle to the right of each outgoing product, provided that the rating of the device is compatible with the selected maximum cross-section.



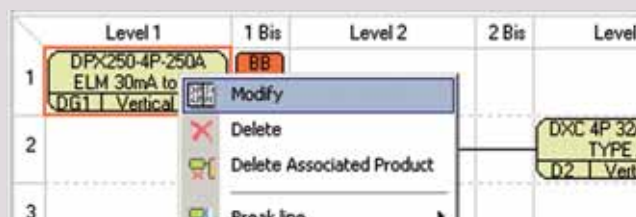
To add additional terminals (see page 47).

Arrangement module

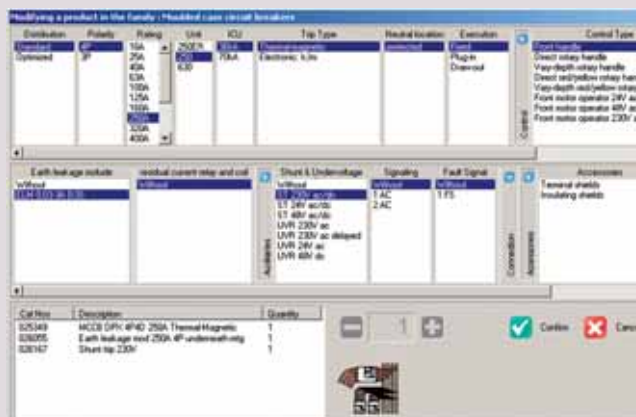
C. Modification and deletion

1. Modifying characteristics

To modify the characteristics of a product, select the **Modify** option in the popup menu which opens when you right-click on the product.

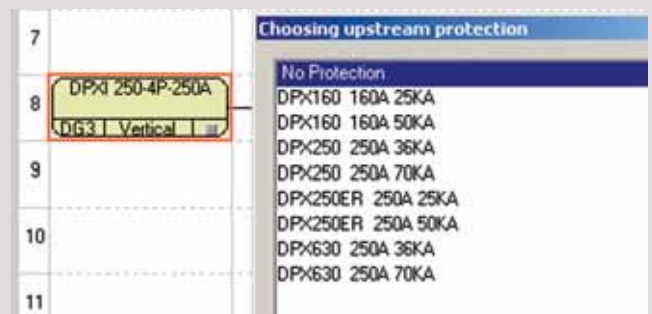


Changes are made in exactly the same way as in the **Parts list** module. However, they can only be made to the selected device as adjustment of the quantity is locked.



2. Upstream Protection

This option is only active for a switch at the top of the tree structure. A popup list can be used to select the type of upstream protection device located in another panel. This is necessary so that XL PRO² can calculate the resulting breaking capacities.

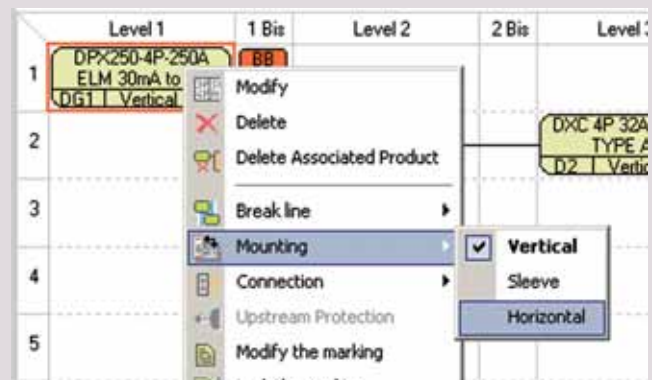


3. Selecting the mounting of the devices

The devices in the DPX range can be mounted both vertically and horizontally.

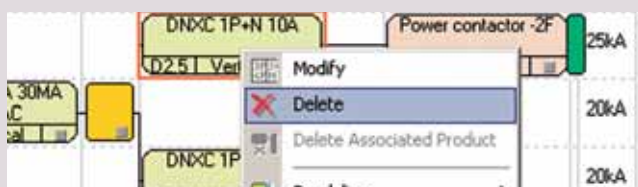
The default mounting direction is **vertical**. However, the **Mounting** option in the popup menu can be used to select **horizontal** mounting, and for certain devices, **sleeved** mounting.

The mounting of devices influences the choice of enclosure.



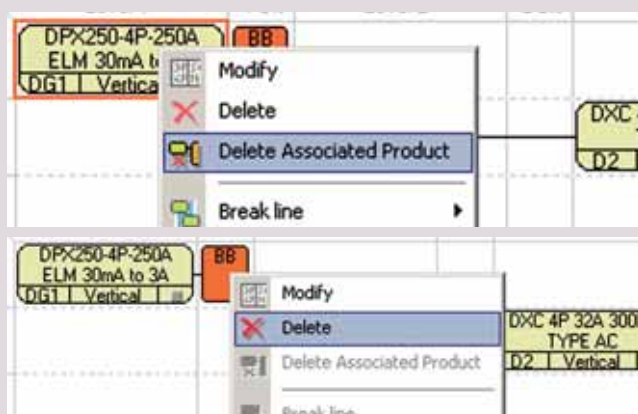
4. Deletion

When the **Delete** option is selected in the popup menu, the product is immediately removed from the tree structure and the parts list for the panel, as are all the products associated with it.



5. Deleting associated products

The **Delete associated product** option in the popup menu is only available for products with an associated distribution block or busbar. This operation can also be carried out by selecting the **Delete** option directly on the busbar or distribution block (see “Adding cabling products” page 26).



! WARNING

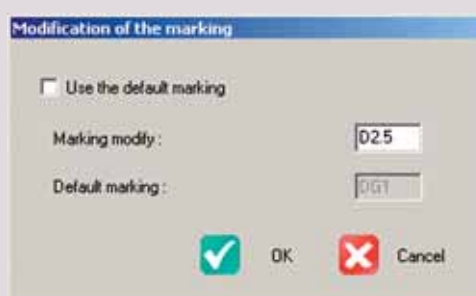
There is no cancel function.
If you accidentally delete a product, you will have to restart the add product procedure.

D. Marking the devices

1. Modification of marking

XL PRO² automatically marks the devices (see page 22), however the markers for each device can be customised.

- Select **Modification of the marking** in the popup menu



- Uncheck the **Use the default marking** box
- Enter your new marker in the **Marking modify** box, then click on **OK**.

These customised markers are not affected by changes to the arrangement.

2. Locking/unlocking marking

The popup menu also has an option for locking or unlocking the default marking of the device. Locked markers will not be affected by changes to the arrangement.

+ TIP

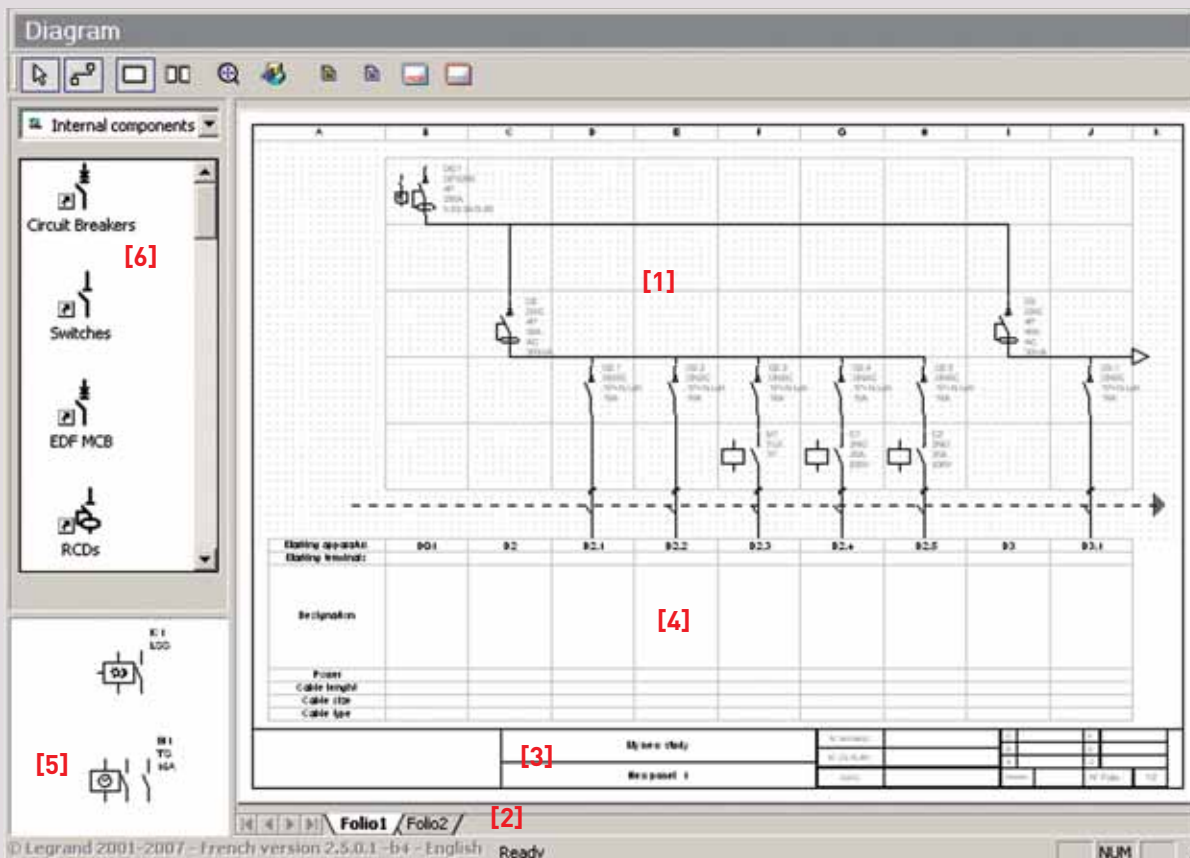
When a marker has been locked, it appears in green in the product caption block.



Diagram module

If you have already selected your products in the Parts list module and organised the panel in the Arrangement module, XL PRO² automatically draws the electrical distribution diagram for the panel in the Diagram window.

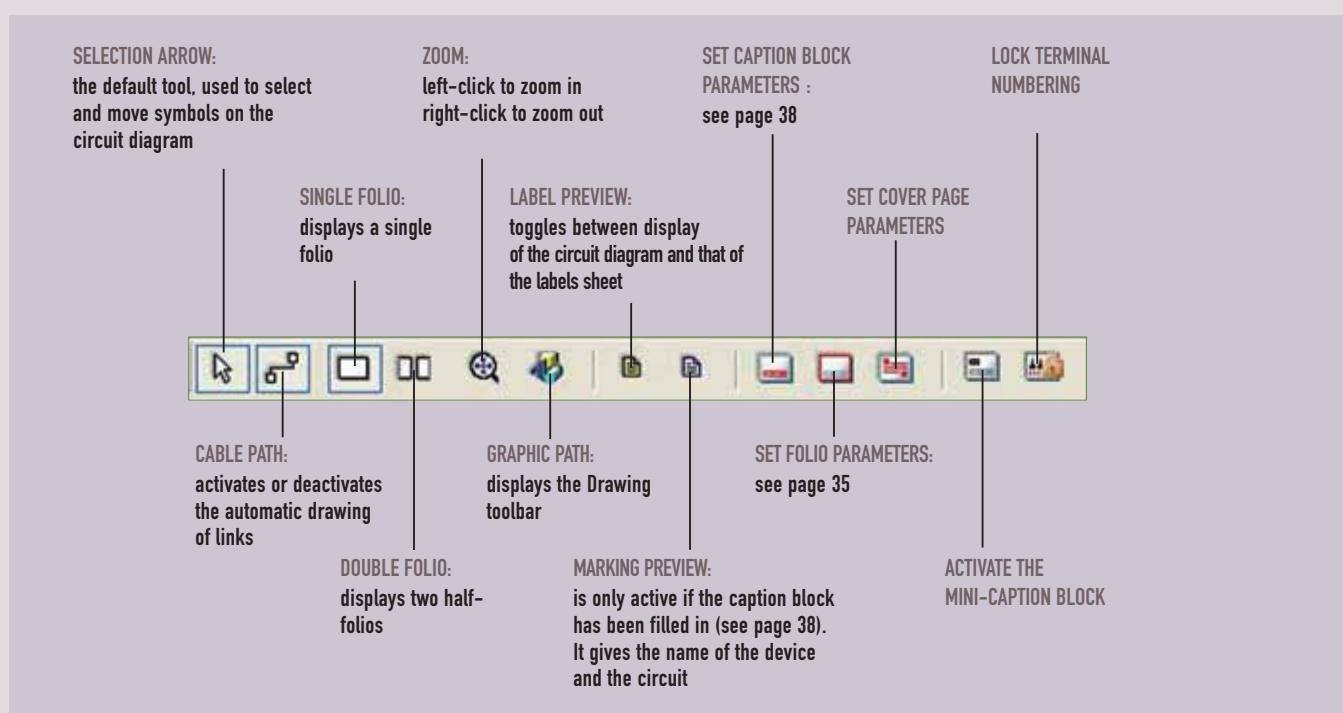
I. Introduction



This diagram is directly connected to the tree structure of the **Arrangement** module. Each product occupies a box on a grid made up of 25 mm squares [1] (Power grid). Its input is connected to the output of the first device on the next level up located to its left. XL PRO² spreads the diagram over as many folios as necessary. The folios are numbered in sequence and can be accessed via the tabs below the diagram [2]. Each device is identified by its electrical symbol and a summary of its properties which can be customised (see page 37).

Each folio has a configurable information area [3]. The caption block [4], which can also be configured, is used for noting information about each circuit below the diagram. Products in the panel which are not directly part of the distribution tree structure (management products) are placed on the graphics pad [5], which is described on page 43. The symbols palette [6] is used to add products to the panel (see page 45).

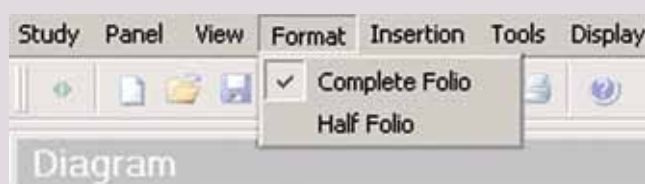
A. Toolbar



B. Menus in the Diagram module

In the **Diagram** module, the menu bar contains four specific menus.

1. "Format" menu



■ **Complete folio:** displays one folio at a time in the Circuit Diagram window.

■ **Half-Folio:** displays two folios at once: the end of the current folio and the beginning of the next one.
This option is useful, for example, when moving products from one folio to another.

Diagram module

2. Insertion menu



- **Power Folio:** used to add a new blank folio after the last folio.
- **Control Folio:** used to add a blank folio containing only the grid with 2.5 mm squares. This type of folio is used for drawing a control diagram. It is inserted after the last folio.
- **Deleting Folio:** used to delete a folio, provided that it contains no products.
- **Modifying folio label:** used to change the name of the current folio which appears in the tabs below the diagram.
- **Display cover page:** used to add a cover page at the start of the diagram.
- **Insert mini-caption block:** used to add details about the installation to the 1st folio (neutral earthing system, nominal voltage, installed power, I_{sc3}, etc).

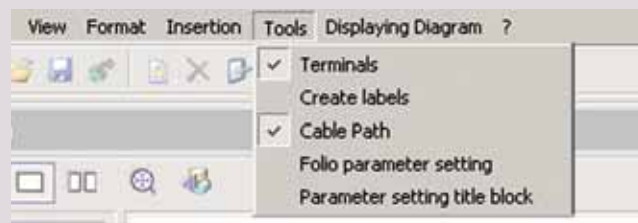
+ TIP

Giving folios an explicit label makes it easier to navigate between them in a complex diagram.

+ TIP

The Export tool in the general toolbar can be used to save the diagram in various different vector formats: EMF and DXF. This function is useful for incorporating data from XL PRO² in standard programs (Autocad, Word, Excel, etc).

3. Tools menu



- **Terminals:** used to calculate and add power terminals automatically (see selecting terminals on page 29).
- **Create labels:** creates a label showing the marker for the component, for all products with a label-holder. The labels can then be printed (see page 41).
- **Cable Path:** this option is ticked by default. Removing the tick deletes the links automatically drawn by XL PRO².
- **Folio parameter setting:** access to the options for customising the information in each folio (see opposite)
- **Parameter setting title block:** access to the options for customising the caption block (see page 38)

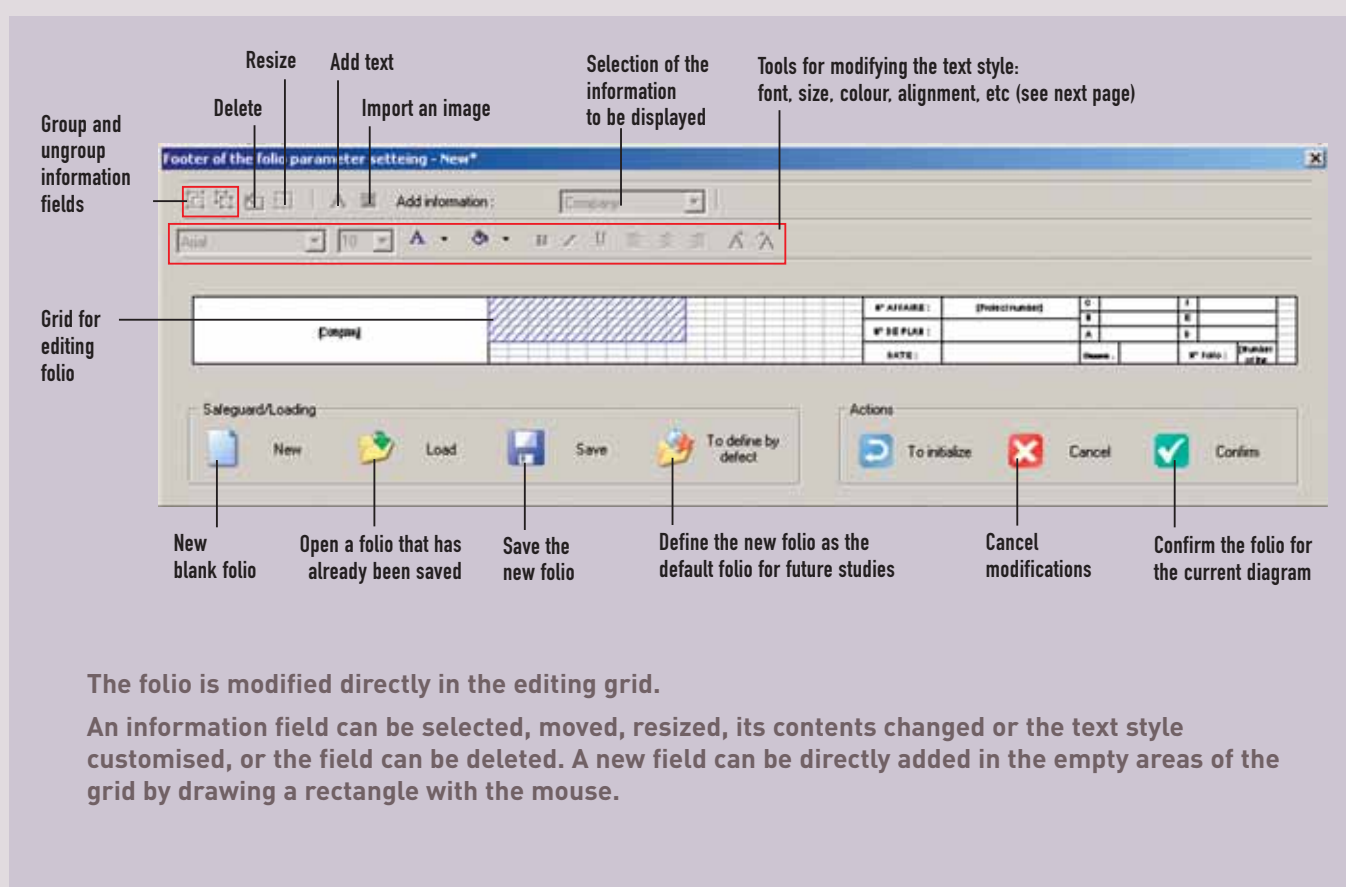
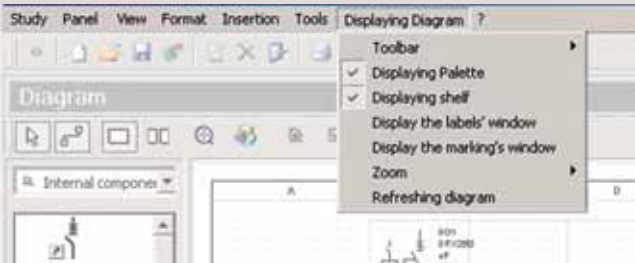



Diagram module

4. Displaying Diagram menu



■ Text toolbar

This contains tools for modifying the text style.
(see below)


It is automatically displayed as soon as text is selected. These tools can be used both on text blocks created using the **Text Area**  tool in the Drawing palette, and on the caption block or the folio.

! WARNING


Once you have finished using the Text or Drawing tools, click on the tool to return to circuit diagram work mode.

■ Drawing toolbar



These tools are similar to those found in graphics applications and their use is intuitive (see below). The graphic elements added to the diagram are automatically placed on a grid with 2.5 mm squares (Management grid) to facilitate their alignment.

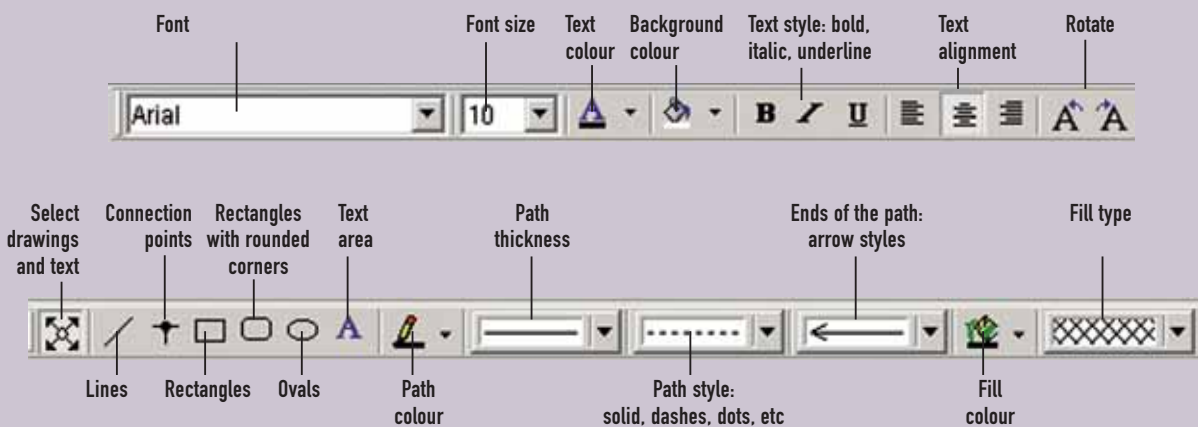
This toolbar can also be accessed via the  icon in the toolbar (see page 33).

+ TIP

To adjust an incorrectly positioned path, select it with the graphic selection tool  then use the arrow keys on the keyboard. It is moved in 2.5 mm intervals.

! WARNING

The graphic selection tool  cannot be used to select or move devices: use the selection arrow .



■ **Displaying palette:** displays or hides the symbols palette. Hiding the symbols palette makes more room available for the graphics pad.

■ **Displaying shelf:** displays or hides the graphics pad.

■ **Display the labels' window:** shows the device labels in the form of a printable sheet. The labels must have already been created (see page 41) or generated automatically (see page 34). It is then possible to modify them directly in the sheet.

Viewing labels

My Study_1

Nouveau tableau 1

D01	D2	D2.1	D2.2	M1	D2.3	D2.4
C1	D2.5	C2	C3	H1	D3	D3.1
D3.2	D3.3	D3.4	D3.5			

■ **Display the marking's window:** lists the markers of the devices and the names of the corresponding circuits as entered in the caption block.

Marking apparatus	Désignation
DG1	Main
D2	light
D2.1	office 1
D2.2	office 2
M1	
D2.3	
D2.4	
C1	
D2.5	

■ **Zoom:** offers 4 enlargement sizes for the diagram. The zoom level is proportional to the size of the XL PRO² window, 100% being the display of the whole folio, irrespective of its size.

+ TIP

Changing the product marking only affects the selected device. It has no effect on automatic marking. To change the markers for a whole family of devices, see page 23.

C. Displaying properties

The properties displayed next to each symbol can be customised. Right-click on the product symbol, then select **Properties** in the popup menu.

In the dialogue box, tick the characteristics to be displayed, then confirm. The properties are updated for all similar products.

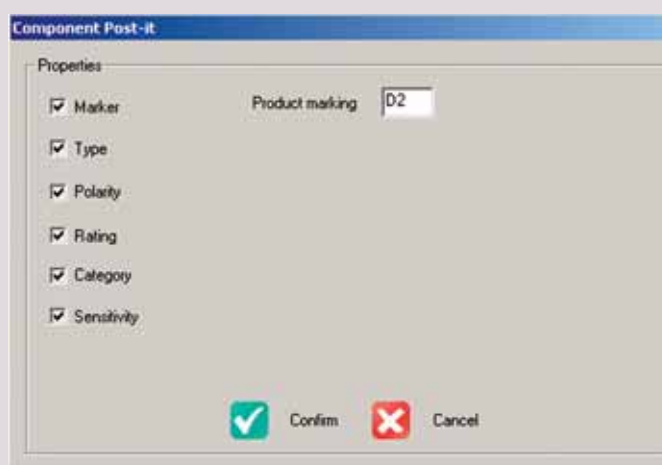


Diagram module

D. Using the caption block

The caption block below the diagram is intended for information on circuits. The number of lines and the information displayed are totally user-configurable. The window for customising the caption block can be accessed via the icon in the toolbar or right-clicking on the caption block header (see below).

Some information will be filled in automatically, and some must be entered manually. Automatic filling in of the **Cable type** and **Cable cross-section** items requires prior configuration which is accessed using the parameters button.

To enter information in empty boxes, double-click in the required box and then enter the text directly. The information can then be formatted with the Text tools.

The Description line can be filled in automatically with the text from the labels: right-click on the title of the line then select **Label format** in the popup

menu. This does not delete the previous information, and you can return to free text format using the same procedure.

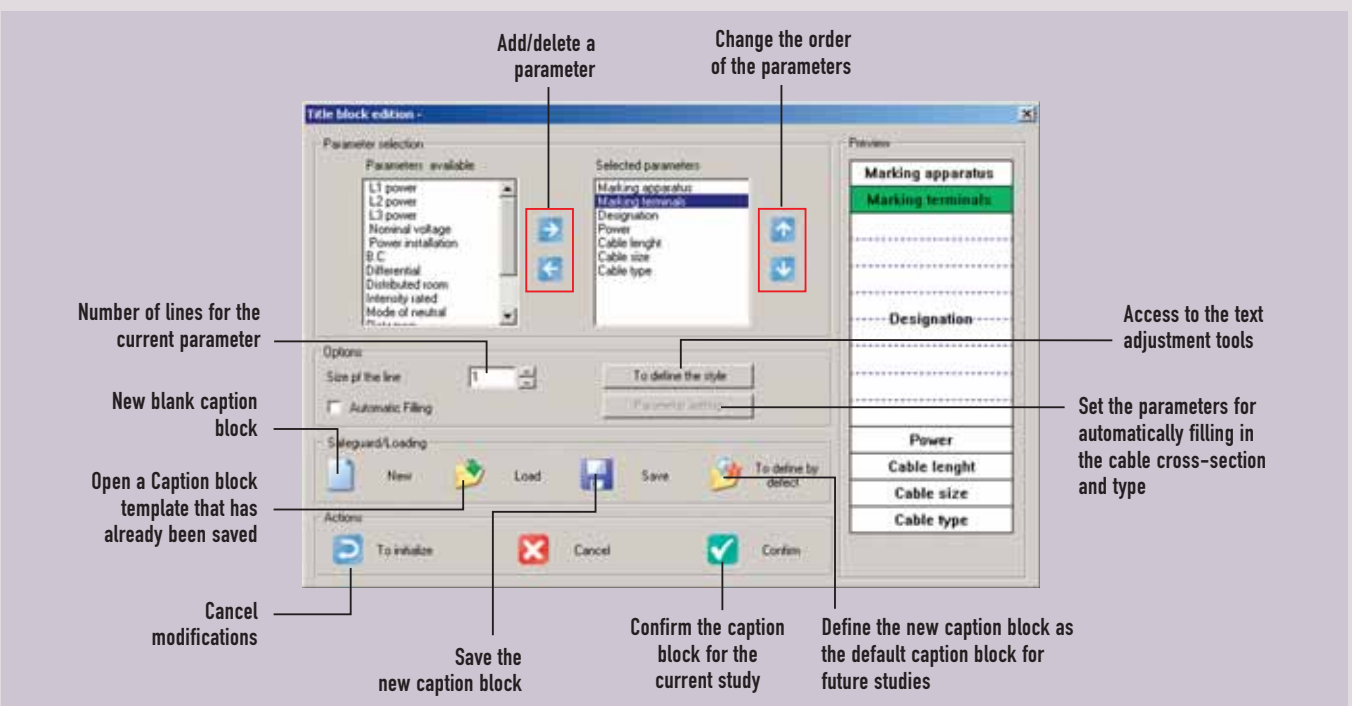
Creating labels is described on page 41.

+ TIP

To fill in several caption block boxes identically: select a box, press **Ctrl + C** and then press **Ctrl + V** in the location where you wish to copy it.

+ TIP

When typing text directly into the caption block, you can move to the next box by confirming with **Ctrl + Enter** and using the arrows on the keyboard.



II. Modifications to the resulting diagram

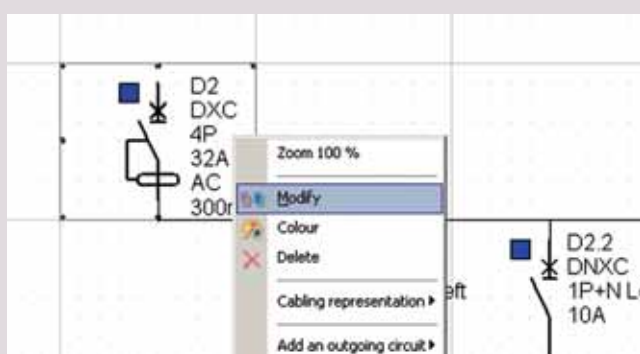
Using the same procedure as that described for the **Arrangement** module, it is possible to change characteristics, reorganise the panel and delete products in the **Diagram** module. The Circuit Diagram module also allows you to add products without having to go back to the **Parts list** module.

A. Changing characteristics

Products are changed in the same way as in the **Arrangement** module.

EXAMPLE: adding an emergency lighting circuit to an MCB already in the panel.

Right-click on the first lighting MCB. Select **Modify** in the popup menu.



The characteristics selection window appears (see page 13). The **Circuit type** column shows the cases in which a secondary MCB is most frequently used. Select **1 Circuit + 1 emergency lighting output** then confirm. The modification immediately appears on the diagram.

+ TIP

In this example, no change is visible in either the **Parts list** or the **Arrangement**. The additional circuit will however be taken into account when calculating the terminals and the overall parts list will therefore be modified (see Summary on page 62).

B. Deleting a device

To delete a device from the panel, select the **Delete** option in the popup menu. The positions of the other products in the diagram remain unchanged. To fix the layout you can delete the column that is left blank using the **Delete Column** option in the popup menu. All the subsequent columns, in all the power folios, are then shifted to the left.

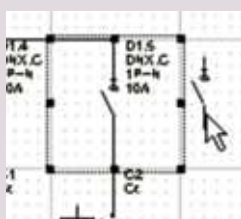
C. Moving devices within a folio using Drag and Drop

Make sure that the location where you want to place the device is empty. If it is not, you can add a new column to the diagram using the **Insert Column** option in the popup menu. The column you have clicked on and all the subsequent columns are shifted to the right. If necessary, an additional folio will be added automatically.

Diagram module

Click on the device and, holding down the mouse button, position it in the required location. When you release the button, the device is automatically positioned on the **Power Grid**.

If the automatic path option is selected, the links are redrawn in accordance with the rule described above.



+ TIP

The operation can also be performed using the **Cut and Paste** options in the popup menu:

- Right-click on the product to be moved and select **Cut**
- Right-click in the destination location and select **Paste**

D. Moving a device to another folio using Cut and Paste

Select the device to be moved then press the **Ctrl** and **X** keys simultaneously. Display the destination folio using the tabs, click on the required location, then press the **Ctrl** and **V** keys simultaneously.

E. Adding a device using Copy and Paste

When you want to add an identical product to one of those already present on the diagram, the simplest method is to use Copy and Paste.

EXAMPLE: adding another 10 A DX.

Right-click on one of the 10 A DXs, then select the **Copy** option. Right-click on the empty box to the right of the last 10 A DX and then select **Paste**. An MCB identical to the one you copied has been added to the panel.

F. Adding a device using the component palettes

It is also possible to add devices to the diagram by dragging the relevant symbol from the **component palettes** (see page 45).

G. Breaking down/Rebuilding a device

A device can be **broken down** in order to separate its different components in the diagram, for example, for a contactor, the coil can be separated from the contacts so that it can be inserted into the control diagram (see page 43).

It is also possible to separate each contact or each pair of contacts from a power device so that they can be used on different circuits. This operation is carried out in two stages using the relevant options in the popup menu:

- Change the single wire, 2-wire, 3-wire or 4-wire representation, according to the device and its intended use
- Break the device down (a 4-pole device with 2-wire representation will be broken down into two pairs of contacts). The new symbols appear on the Power grid.

Each contact or pair of contacts can then be moved separately. Only one of the symbols remains on the Power grid. The new symbols are positioned on the **Management grid**. To insert them into the diagram at their new location, they must be transferred to the Power grid using the relevant option in the popup menu.

The reverse is also possible.

Rebuilding is only active when a product that has been broken down is selected. The procedure is then the same, and the components of the device return to their position beside the original symbol.

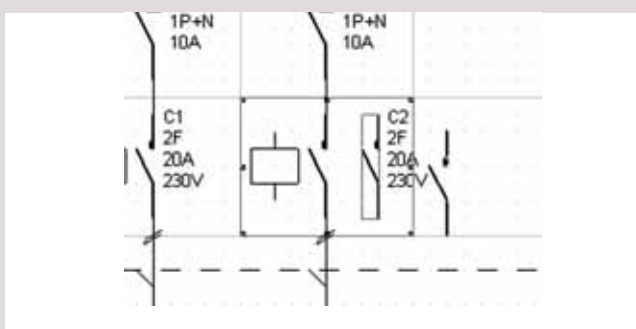
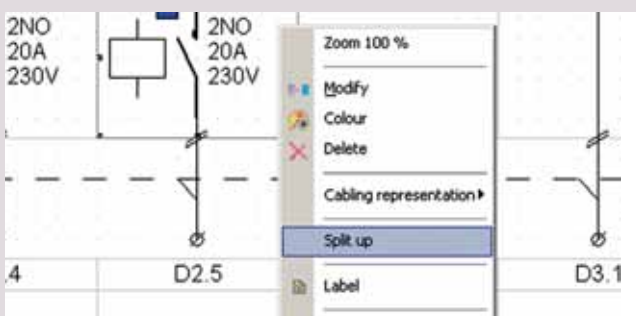
■ **EXAMPLE:** using a single 4 NO contactor on two separate phase/neutral circuits.

Select the power contactor C1, right-click on it and then select the **Modify** option. In the **Polarity** column select **4NO**, then **Add**. In the diagram, right-click on the contactor again.

Select the **Wire representation** option, then click on **2-wire** in the submenu.

A second symbol appears next to the first one. Each symbol represents a pair of contacts in the 4NO contactor.

Open the popup menu again and select the **Split up** option.



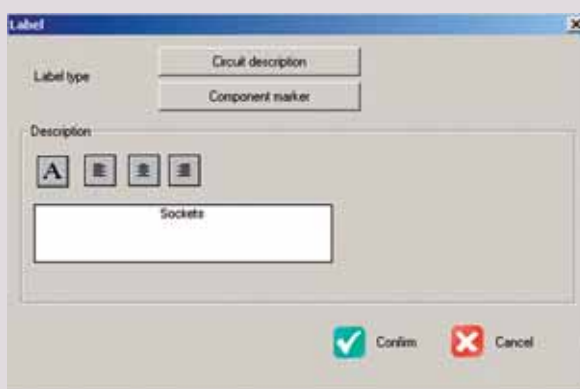
Move the second contact symbol to the lighting circuit on the left of the diagram.

To insert it into the circuit, click on **Management > Power** in the popup menu.

H. Creating labels

XL PRO² can be used to create labels for all devices that have a label-holder:

- Right-click on the device to be labelled
- Select the **Label** option in the popup menu
- In the data entry window, select **Component marker** for automatic labelling or **Circuit description** for customised labelling.



- In the circuit description, type the text of the label in the data entry area (its width corresponds to that of the label-holder)

- The buttons above the data entry area can be used to change the appearance of the text.

Labelled devices are identified by a small blue square. You can click on this square to display the label. You can also preview a sheet of labels by clicking on the tool, or selecting the **Display label window** in the **Display diagram** menu.

In this mode, double-clicking on a label opens the data entry window allowing you to make changes directly.

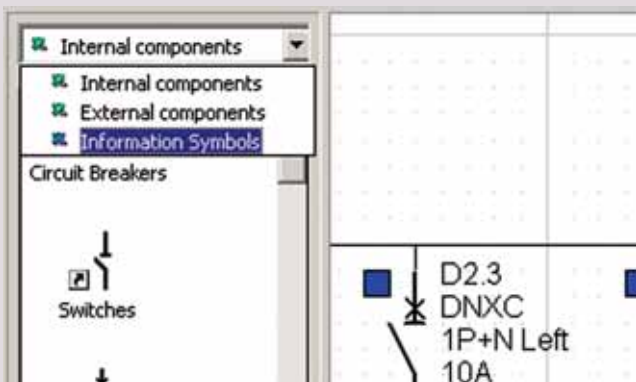
To print the labels, switch to the mode displaying the sheet of labels (tool) then click on the button in the XL PRO² toolbar.

Diagram module

42

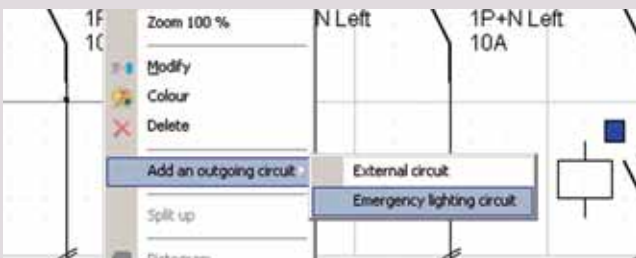
I. Enhancing the diagram

In addition to the drawing tools used to draw frames and lines, add connection points, and insert free text, etc, the **Information symbols** palette, accessed via the dropdown palettes menu, contains conventional symbols that can be dragged directly onto the diagram.



J. Adding output circuit

This is used to add a further output on the same protection device.



III. Creating a control diagram

To build the control diagram, you must first break the devices down into their different subassemblies (coils, motors, contacts, etc). The graphics pad is used to store these components temporarily. Devices used for management purposes only, which are added in the **Parts list** module, are automatically placed on the graphics pad when the **Diagram** module is opened. The components of power devices integral to the control diagram must be placed on it manually.

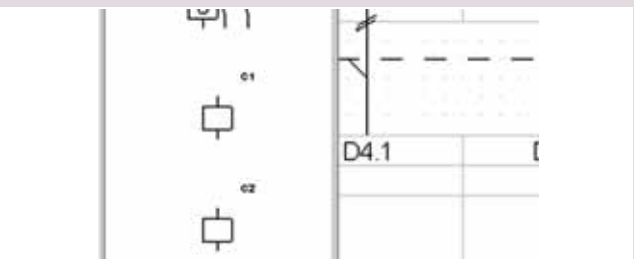
+ TIP

The respective areas of the 3 blocks (products, graphics pad and circuit diagram) can be enlarged by moving their separation lines.

EXAMPLE: power contactor coils

Right-click on the C2 power contactor, then select the **Split up** option in the popup menu. You then simply move the coil to the graphics pad using **Drag and Drop** so that it is available to be inserted in the control diagram.

If you have followed the example from the previous page, the C1 contactor has already been broken down, and its coil can be placed directly on the graphics pad.



A. The control folio

To draw the control diagram on a folio that is separate from the general diagram, a specific folio is used which only contains the grid with 2.5 mm squares. To add this type of folio, select the **Control Folio** option in the **Insertion** menu.

The new folio is placed after the power folios. To display it, click on the last tab. You can rename it using the **Modifying folio label** option in the **Insertion** menu.

B. Moving elements from graphics pad onto the diagram

Move the elements from the graphics pad to the diagram, arranging them as required. Automatic adjustment to the grid facilitates the alignment of connections.

Complete products on the graphics pad are moved component by component once they have been broken down.



When symbols are placed on the diagram, automatic marking is used to show to which device they belong. The components from a power device are accompanied by the marker for that device.

C. Adding products external to the panel

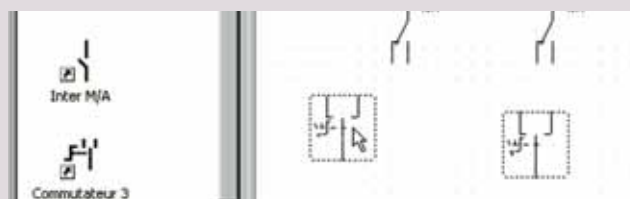
The **External components** palette, which can be accessed via the dropdown palette menu contains additional components, external to the panel (indicator lamps, switches, etc).

To add them to the diagram, drag them to the folio with the mouse and then click to drop them in the required location.

■ EXAMPLE:

Select the **External components** palette in the dropdown menu. Use the vertical scroll bar on the palette to find the **3-position switch** symbol, and select it.

Drag it to the control folio, then click to drop it in the required position.






! WARNING


Elements added from the external components palette are not taken into account in the **Parts list** or in your **Summary** or your **Purchase order**. They are considered as being external to the panel. To add control and signalling products which are incorporated in the panel (modular or door-mounted), use the internal components palette (Control and signalling unit symbol) or the **Parts list module** (Control and signalling unit family).

Diagram module

D. Drawing links (drawing tools)

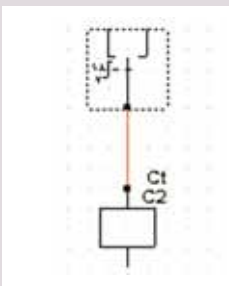
The links between the components on the control diagram must be drawn manually.


Click on the **Graphic path**  tool (see page 38) in the toolbar, and if required change the colour, by clicking on the **Brush** , and the thickness of the paths in the dropdown menus (see page 37), then select the **Line**  tool.

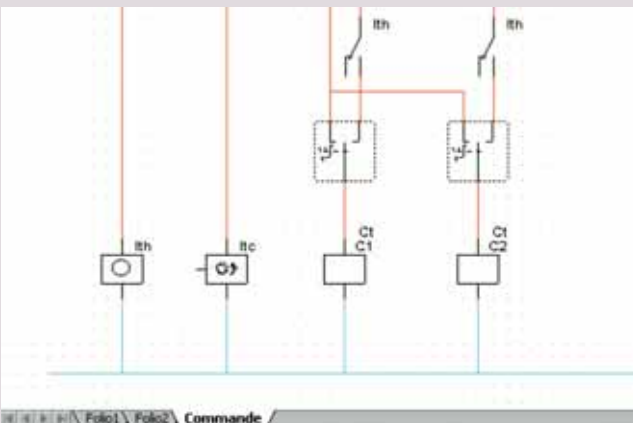
It is also possible to add text to the diagram with the **Text area**  tool (see page 36).

On the diagram, click where you want the line to start, then holding down the mouse button, drag the pointer to where you want the line to end.

Again, automatic adjustment to the grid facilitates the alignment and joining of connection paths.



To move and change a path, use the **Select graphic**  tool. To delete a path, select it then press **Del** key on the keyboard.

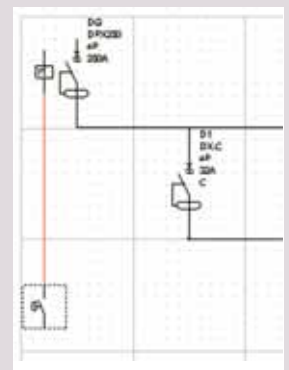


E. Alternative option: drawing the control diagram on the main diagram



All the operations described above can be performed directly on the power folios.

EXAMPLE: adding an emergency stop button.

The general MCB has been fitted with a shunt trip for external emergency circuit breaking. In the external components palette, select the **Emergency breaking NO** symbol, then drag it to the diagram, below the the trip. Use the drawing tools to draw the link.



! WARNING

To move electrical symbols, you must use the "selection arrow" tool . The  tool only works with connection paths created using the drawing tools.

IV. Designing a new panel using the Circuit Diagram module

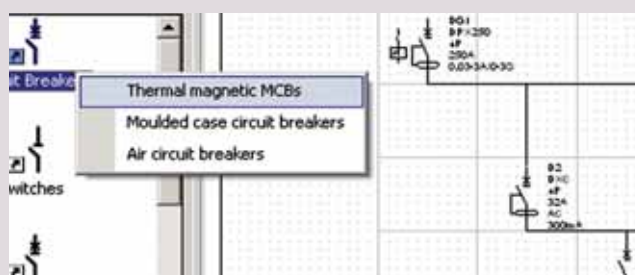
A. Creating a new panel

To construct a panel in the Circuit Diagram module, create a new panel in the current study (menu **Panel > New...**).

The Circuit Diagram module then displays a blank power folio. You can customise the folio and the caption block (see pages 35 and 38).

B. Selecting devices in the internal components palette

In the **Internal components** palette, the products are grouped together by electrical symbol. Several different families of products can be represented by the same symbol (for example, MCCBs and modular MCBs). In this case, left-clicking on the symbol displays a popup menu in which you can select the required family.



The selected symbol follows the mouse pointer. Simply click on the required location in the diagram to place it. The characteristics selection window for the selected product family then opens. Selections are made in exactly the same way as in the **Parts list** module (see page 14). However, only one device can be selected at a time, and the Quantity field is therefore inaccessible.

! WARNING

Clicking on the **Add** button immediately closes the window and returns you to the diagram.

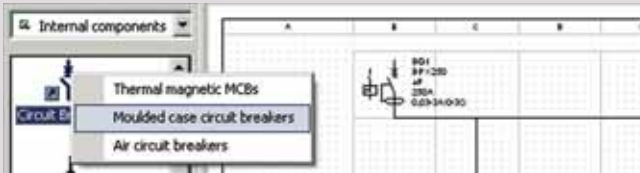
The symbols are automatically centred in the boxes of the Power grid. Some devices fitted with a large number of auxiliaries occupy two or three boxes. The properties displayed next to the symbols can be chosen by selecting the **Properties** option in the popup menu (right-click on the symbol).

Diagram module

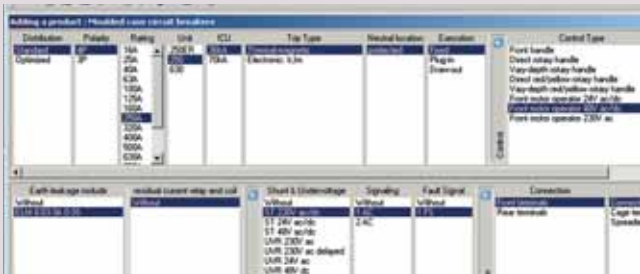
46

■ **EXAMPLE:** selecting an MCCB.

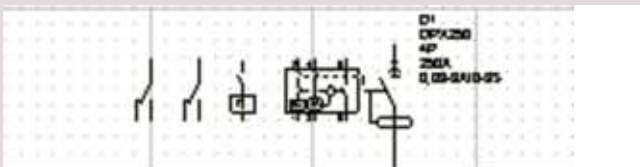
- In the **Internal components** palette, select the **Circuit breakers** symbol
- In the popup menu select **MCCBs**



- Place the symbol in the first box on the diagram
- Select the characteristics and options as shown below, then click on **Add**.



The MCCB symbol is inserted in the diagram. Motor-driven control, the release and auxiliary contacts are also represented.



You can check that the device has been correctly added to the **Parts list**...

Description	Catalogue	Quantity
MCCB DPX 4P4D 250A Thermal-Magnetic	025349	1
Motor operator 48V DPX250	026131	1
Earth leakage mod 250A 4P underneath-mtg	026055	1
Shunt trip 230V	026167	1
Signaling or Fault contact	026160	2

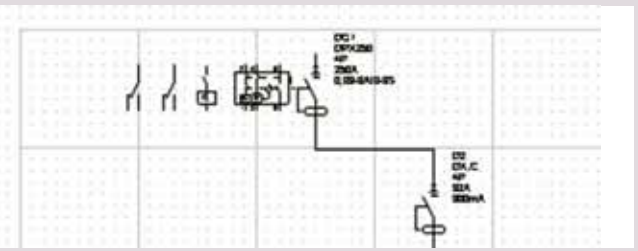
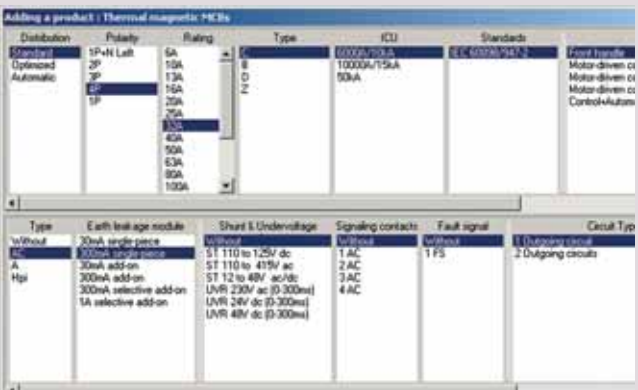
... and in the **Arrangement**.

Arrangement			
Level 1	1 Bis	Level 2	2 Bis
1	DPX250-4P-250A ELM 30mA to 3A 0G1 Vertical		

■ **EXAMPLE:** Selecting modular MCBs

In the **Internal components** palette, select the **Circuit breakers** symbol and choose **MCBs** in the popup menu. Place the symbol on the second line of the diagram. Select the characteristics and options as shown below, then click on **Add**.

The MCB symbol is inserted in the diagram and is automatically connected to the main device.



+ TIP

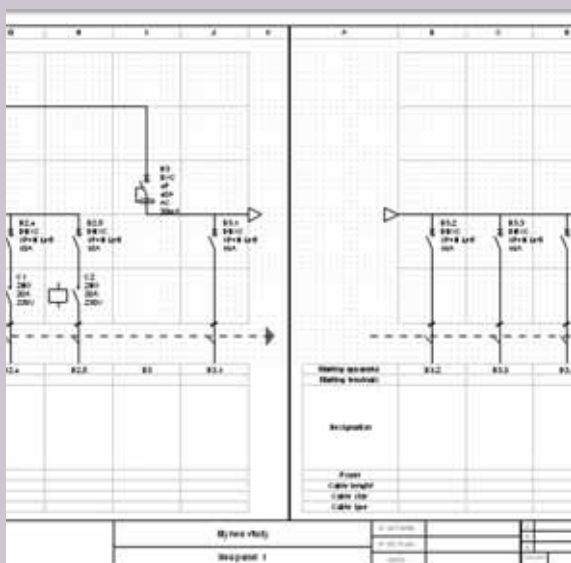
- To add several identical devices, use the **Copy and Paste** function (see page 40 “Adding a device using Copy and Paste”)
- To create a clearer diagram and to ensure as much information as possible can be fitted in the caption block, place only one device in each column.

C. Adding folios

To expand the diagram, additional folios must be added manually (menu **Insertion > Power folio**).

+ TIP

Half-Folio display in the **Format** menu makes it easier to check the continuity of the diagram.



D. Calculating terminals

To include output terminals in the panel, select the **Terminals** option in the **Tools** menu. Once the characteristics have been selected and confirmed, they will appear on the diagram.

E. Adding additional terminals

To add an additional terminal, click on the **Terminals** symbol in the internal components palette. Position the terminal in the desired location on the diagram, select the type and cross-section of the required terminal, then click on **Add**.

+ TIP

To add several terminals of the same type in a single operation, return to the **Parts list** module and select **Additional terminals** in the **Cabling products** family. The terminals that have been added will be placed on the graphics pad in the **Circuit Diagram** module.

Enclosures module

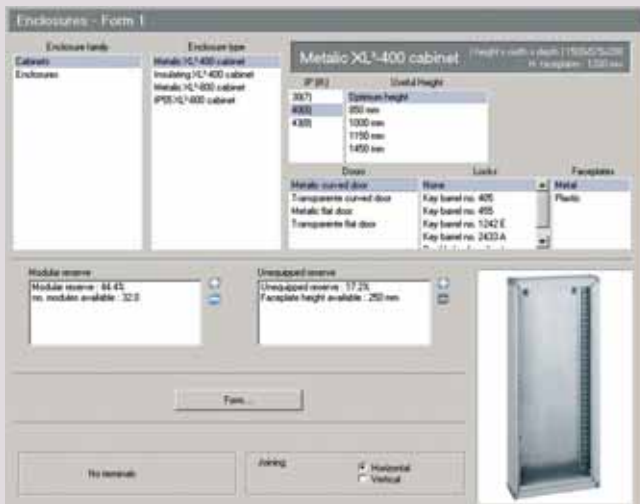
When the Enclosures module is opened, XL PRO² automatically calculates the enclosures with the capacity to house all the products used in the panel. This calculation takes into account the dimensions of the devices, their fixing mechanisms and the space required to connect them.

I. Introduction

The module window shows the choices available and can be used to select the characteristics and adjust the reserve.

Depending on the type of enclosure chosen, XL PRO² immediately calculates the overall dimensions and the total faceplate height used, taking into account the number of enclosures required.

This information is visible in the upper banner of the window.



II. Selecting the enclosure

Enclosures are classified into **4 families** : cabinets, enclosures, flush mounting cabinets and service trunking. After choosing the family, select the **type of enclosure** required. The dimensions and faceplate height information on the banner is updated automatically.

By default, the enclosure is automatically fitted with a **door**. For an enclosure without a door, select IP 30 index.

Then select the **usable height**, the **width of the enclosure**, the **door**, the **lock** and the **type of plate** you want fitted on your enclosure.

+ TIP

The photo can be used to check the type of enclosure selected but is not an accurate reflection of the dimensions calculated.

In the usable height column, XL PRO² calculates the optimum height, but you can choose the required height (XL PRO² will then reinstall the products in the selected enclosures).

A. Reserve

Enclosures are calculated with a reserve percentage that can be adjusted using the **+** and **-** buttons.

1. Modular reserve

The “modular reserve” represents the unused space on **U** rails for modular devices. It is shown as a percentage and as a number of modules. By default XL PRO² calculates the enclosure with a “modular reserve” of at least 20% which is accounted for by empty spaces, or even the addition of empty rails. The **+** and **-** buttons are used to increase or decrease this “modular reserve”. When the enclosure has no empty rails, the **-** button is deactivated.

2. Unequipped reserve

These positions are automatically fitted with blanking plates on the faceplates, and the empty rails are fitted with solid faceplates. The unequipped reserve is indicated as a percentage of the usable faceplate height. It is not taken into account when calculating the terminal block reserve.

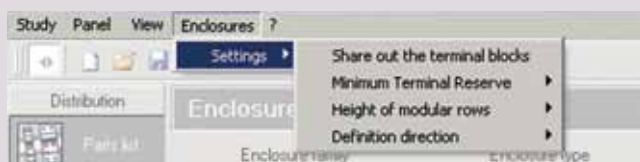
B. Joining

When the panel is made up of cabinets, they can be joined either horizontally or vertically. This choice will obviously modify the dimensions shown in the banner.

! WARNING

As when choosing device characteristics, ensure that you follow the required order when making selections. Any change in a column results in the subsequent columns being reset to their default values.

C. Enclosures menu



1. Share out the terminal blocks

The software automatically calculates the space available for your terminals.

There are two possible distribution methods:

- either grouping all the terminals together in the same place, which is a quick operation
- or distributing the terminals in the enclosures according to the products with which they are associated.

2. Minimum terminal reserve

If the panel has a block of output terminals, a reserve can also be provided for the terminals. It is calculated as a percentage of the modular reserve on the basis of one output per available module. The minimum reserve percentage required can be adjusted using the menu **Enclosures > Settings > Minimum terminal reserve**. The default setting is 80 %.

3. Height of modular rows

For extendable cabinets and enclosures, the height of the modular rows used to calculate the enclosure can be selected in the menu **Enclosures > Settings > Height of modular rows**. The default height is always 150 mm. Any adjustment will affect all the rows. The height of each row can be adjusted individually in the **Preview** module (see page 57). "Ready-to-use" cabinets have a fixed row height of 150 mm.

4. Direction of installation

By default, the devices will be installed in the enclosures starting from the top and working down. However, to comply with the practices used in some countries, it is possible to install the products starting from the bottom and working up, using the menu: **Enclosures > Settings > Definition direction**.

Preview module

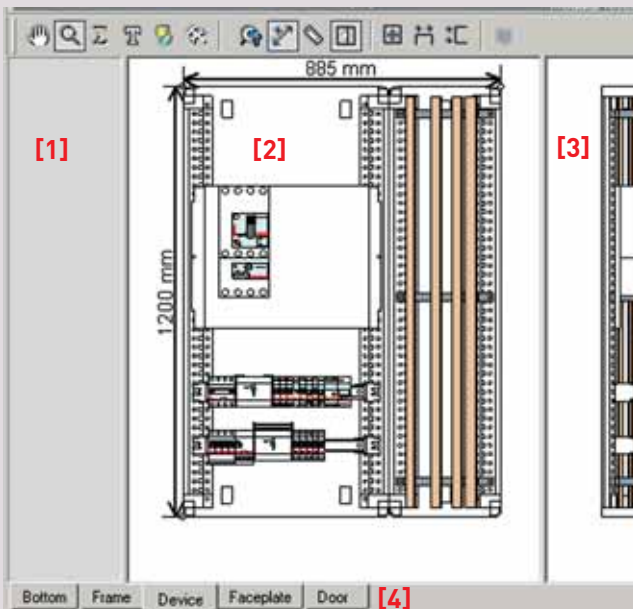
The preview module displays various views of the panel and can be used to make certain adjustments to the panel: dimensions of the enclosures and busbars, product layout, addition of accessories, etc.

I. Introduction

By default the **Preview** module window is divided into 2 parts:

- The workbench [1], for putting products down temporarily
- The front view of the panel [2].

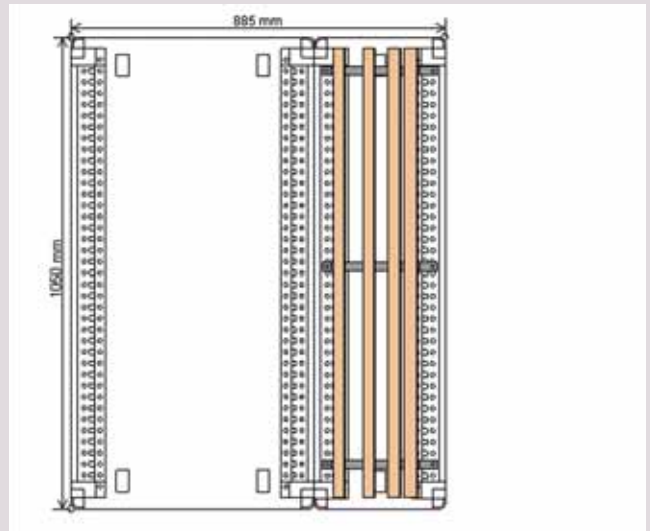
A third pane [3] is available for displaying the side view of the panel. When the panel has several enclosures, you can choose which one will be shown in side view.



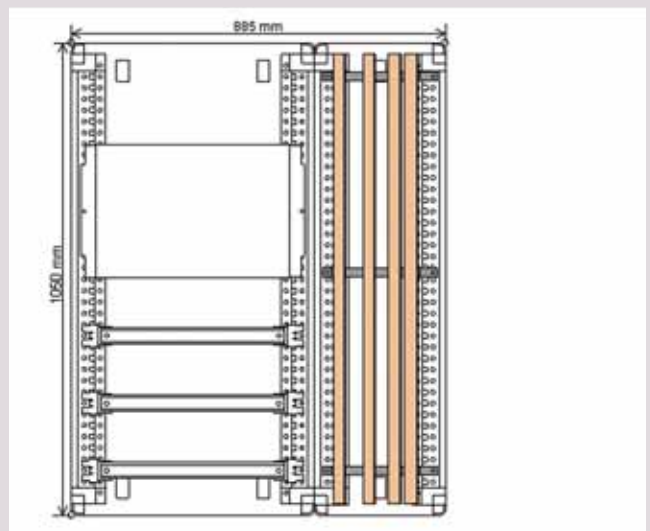
A. Tabs

There are five tabs [4], which are used for changing the display mode

1. Bottom tab



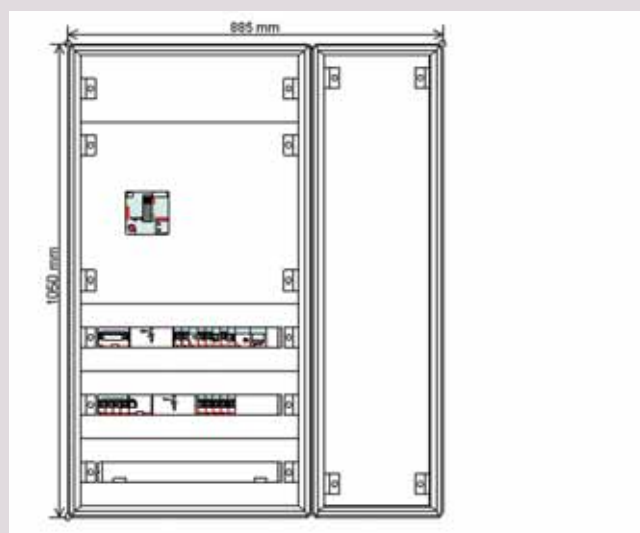
2. Frame tab



3. Device tab

By default, the Device tab is displayed when the window opens. See opposite

4. Faceplate tab



5. Door tab



B. Toolbars

HAND TOOL:
used to move items in the preview window.

WORK TOOL:
this is the main tool used to modify the layout of the panel.

SHOW/HIDE RULERS:
vertical gradations

MEASUREMENT TOOL:
calculates the distance between two points.

SHOW/HIDE TEXT

MAXIMUM WIDTH:
adjusts the size of the display to the width of the enclosure

MAXIMUM HEIGHT:
adjusts the size of the display to the height of the enclosure

TEXT MODE AND DRAWING MODE:
for writing or drawing anywhere in the module.

SHOW/HIDE DIMENSIONS

VIEW ALL:
adjusts the size of the display to show the whole enclosure.

SHOW/HIDE SIDE VIEW

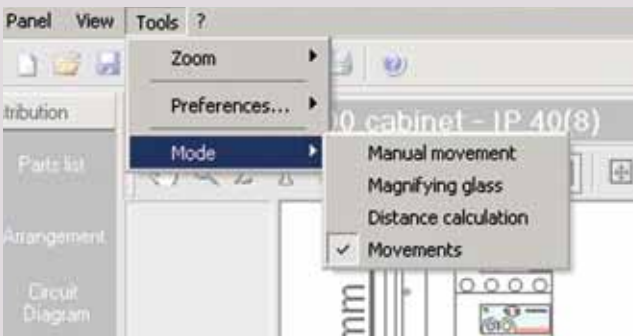
LIBRARY:
Choice of additional accessories. See page 55

MAGNIFYING GLASS TOOL:
left-click to zoom in, right-click to zoom out.


Preview module

C. Tools Menu

The **Tools** menu includes some of the functions of the tools described on the previous page.



D. Printing

By default, when you print the preview ( tool in the general toolbar), XL PRO² automatically adapts the height of the panel to the paper format. The number of pages printed therefore depends on the panel width. If you want the complete panel to appear on a single page, tick **Print complete view** in the **Preferences** item in the **Tools** menu.

! WARNING

The Print marking option can be used to print the marking above each device. They may however be illegible on a complete view.

+ TIP

The preview can be exported to EMF or DXF format by selecting the icon in the general toolbar.

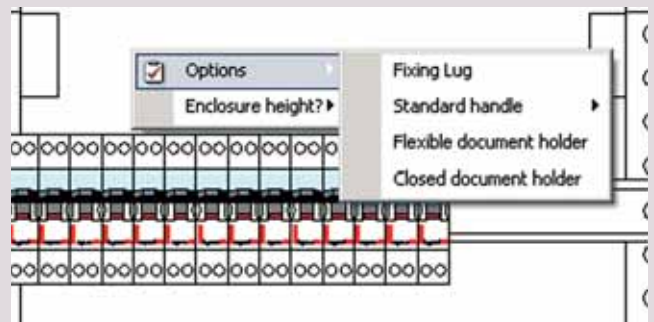
II. Modifying the panel

Modifications can be made either directly with the mouse using the **Work tool**, or via the popup menus: right-click on the item to be modified.

The options offered will differ depending on the type of enclosure and where you click.

A. Fully modular cabinets (Ekinox, Atlantic, Marina, Plexo, XL³ 160)

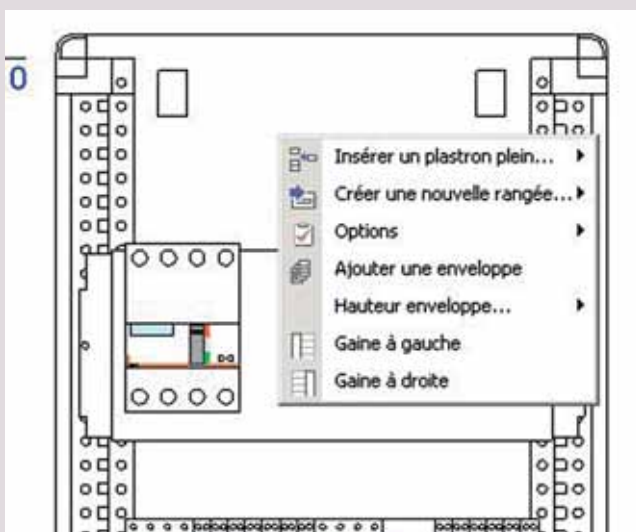
Modifications are limited to the choice of the height of the cabinet, the options specific to the model of cabinet and the movement of devices from one row to another.



B. XL³ extendable enclosures (XL³ 400, 800, 4000)

1. General popup menu

Device view/Faceplate view



Inserting or deleting solid faceplates

The panel can be reorganised by inserting or deleting solid faceplates.

- Go to **Faceplate** preview mode
- Right-click on a faceplate
- Select **Insert solid faceplate** in the popup menu
- Select the required height

The new faceplate is inserted above the faceplate you clicked, shifting the other rows downwards (if this is a top to bottom installation). The rows of devices which no longer fit in the enclosure are placed on the workbench.

To delete a faceplate, select it, then press the **Del** on the keyboard.

! WARNING

XL PRO² automatically fills any unequipped space at the bottom of enclosures (or at the top, depending on the installation direction selected) with solid faceplates. There is therefore no point in trying to remove these faceplates.

It is also not possible to move solid faceplates masking unequipped positions. Always use the insert/delete option to make any modifications.

Creating or deleting a row

You can create a row for modular devices or for terminal blocks:

- Right-click below the row to be inserted
- Select **Create a new row** in the popup menu
- Tick the type of row required

The new row will be inserted above the faceplate you clicked.

To delete a row, the row must be empty and placed on the workbench. Select the row, then press the **Del** key on the keyboard. You will always be asked to confirm the delete operation.

+ TIP

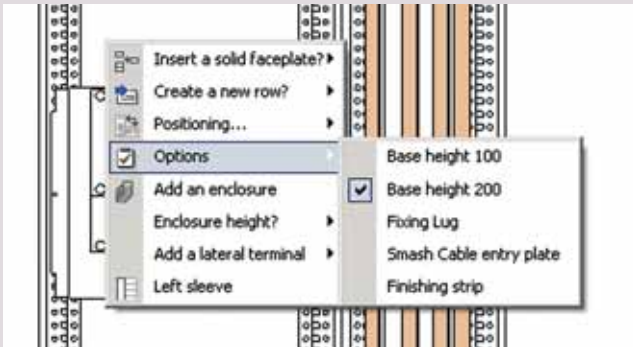
A row can also be created using a product placed on the workbench.

+ TIP

To handle rows, go to **Faceplate view** and click on the faceplate. You can then move the devices, supports and faceplates. Check carefully that the faceplate is selected before moving.

Preview module

Options



Specific equipment will appear, depending on your enclosure model and its configuration. Simply click to select or deselect options.

! WARNING

The options you choose affect all the enclosures in the panel.

Enclosure displayed in side view

You can choose which enclosure you want to display in side view (# tool):

- Right-click on the chosen enclosure
- Tick **Enclosure displayed in side view** in the popup menu.

Adding, moving and deleting an enclosure

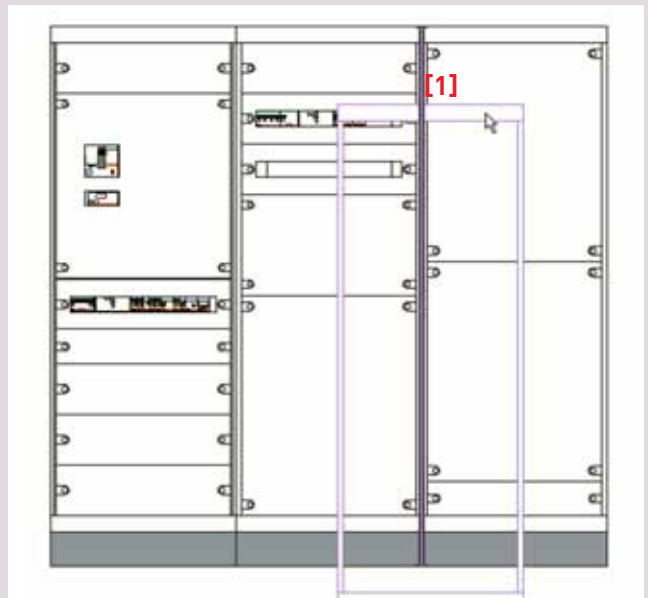
- Right-click on an enclosure
- Select **Add an enclosure**

An enclosure of the same type and with the same dimensions will be added. Enclosures are added to the right of the panel. Cabinets are added to the right or below, depending on the linking direction selected in the **Enclosures** module.

To move an enclosure:

- Left-click on the enclosure
- Drag it to the required location
- Release the mouse button

A coloured bar shows where it will be inserted **[1]**.



■ Adding new devices

To add devices, you must return to the **Parts list** module or the **Circuit Diagram** module, and follow the procedure described earlier. Then return directly to the **Preview** module. You will see that the new products have been placed on the workbench. They can then be installed in the panel.

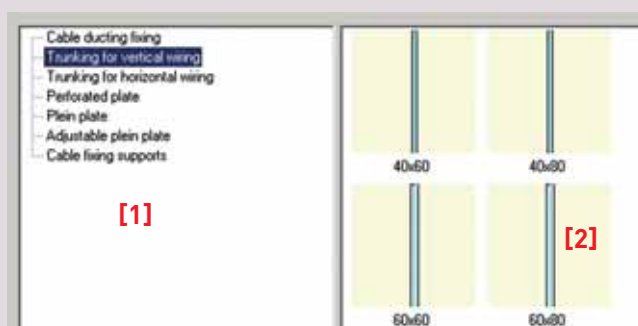
! WARNING

This procedure should be used for modular devices only. If you add power devices, they may be incompatible with the type of enclosure already defined, resulting in an invalid configuration. Any recalculation of the panel in the Enclosures module will result in all the changes already made in Preview being lost.

■ Adding additional equipment

Additional equipment is available in the library: Lina trunking, perforated plates, cable anchoring supports.

- Open the library by clicking on the icon in the toolbar
- Select the type of equipment in pane [1]
- Select the model in pane [2]
- Click **OK** to confirm



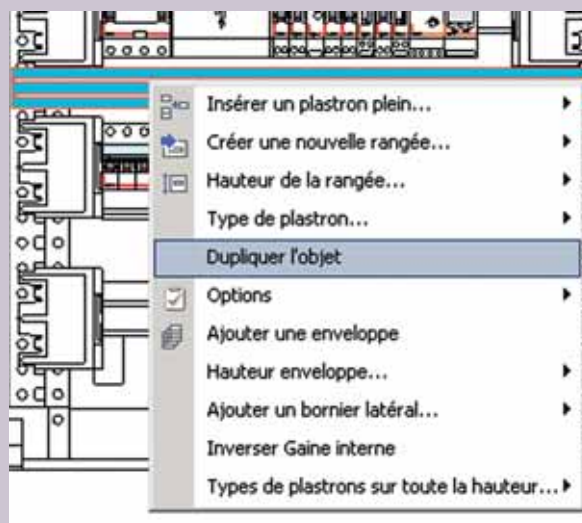
The product is temporarily placed on the workbench. To place it in the enclosure drag it to the required location on the preview.

For Lina trunking, you must adjust the length in the same way as for busbars (see page 60). The catalogue numbers and quantities required are automatically added to the list of equipment.

+ TIP

A piece of equipment that has already been positioned can be duplicated using a simple operation:

Right-click + “duplicate object” menu



Preview module

■ Enclosure height

The heights of all the cabinets and enclosures can be changed in two ways:

- Using the corresponding option in the popup menu which displays all the available heights according to the type of enclosure
- Directly using the mouse by dragging the top or bottom of the enclosure

If the panel has several enclosures joined horizontally, they will all be changed simultaneously. The heights of cabinets that are joined vertically can be adjusted individually.

When the height is reduced, the rows of devices which no longer have sufficient space are automatically placed on the workbench. They must then be reinstalled in the panel manually (see page 59).

■ Left/right sleeve

You can create or delete a sleeve to the left or right by selecting or deselecting this.

! WARNING

The sleeve must be empty for it to be deleted.
You must delete the equipment first before performing this operation.

2. DPX row popup menu

Device view/Faceplate view

When you right-click on a DPX, 2 additional submenus appear which are specific to DPX rows.



■ Mounting

You can choose mounting on a plate (selected by default) or mounting on a rail for DPX 125, 160, 250 ER and DPX-IS 250.

■ Positioning

Connected with the type of mounting chosen, this option is only available for mounting on plate.

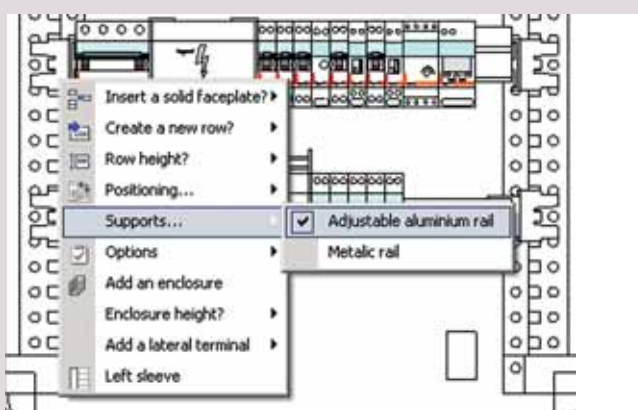
By default the positioning of your DPX row is vertical. It can be deselected to obtain horizontal positioning or in a sleeve.

When positioning in a sleeve is selected, your row is moved by default into a left sleeve if there is one already present, otherwise the row is placed on the workbench.

! WARNING

If you have selected horizontal positioning, it will not be possible to place your DPX row in a sleeve. You must go back to vertical positioning in order to perform this operation.

3. Modular row popup menu Device view/Faceplate view



■ Row height

The default height of modular rows is set in the **Enclosures** module (see page 48). You can change this height for each row individually. Go to **Faceplate** preview mode, then right-click on the row to be modified and select the required height in the **Row height** option.

■ Positioning

Only vertical positioning (ticked by default) or in a sleeve is available.

! WARNING

When moving a modular row in a sleeve, any surplus devices (max. sleeve capacity: 9 modules) will be placed on the workbench.

+ TIP

If you select **Positioning > Sleeve** when you have not created any sleeves or you have only created a right sleeve, your product will be placed on the workbench.

■ Supports

The default support in an XL³ 400 is a metal rail. You can replace it with an adjustable aluminium rail by ticking this option.

In XL³ 800 and 4000 enclosures, the support must be an adjustable aluminium rail.

4. Sleeves popup menu Device view/Faceplate view



■ Insert a solid faceplate

Select the required faceplate height.

■ Create a new row

Select the type of row: **Modular**, **Lighting kit**, **Terminal block**.

■ Cable sleeve with faceplate

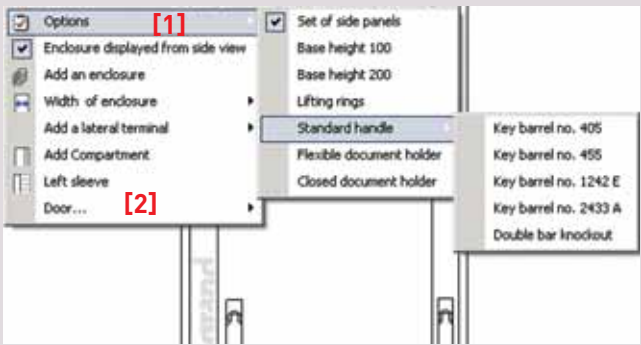
This is active by default and can be used to remove the faceplate from the cable sleeve to fit flush-mounted products on the sleeve doors.

! WARNING

To deselect this option the products must first be deleted from the sleeve.

Preview module

5. Door view popup menu



Options

Here you will find options specific to doors and enclosures, such as handles and document holders [1].

! WARNING

The locks were chosen in the Enclosures module. A new lock can only be chosen for the current door.

Door

Depending on the IP chosen at the start of your panel, this submenu will optionally offer you a door and the various available options [2].

+ TIP


The grey banner in this module displays the selected IP. You can therefore check that it matches your requirements.

6. Modifying products

To modify your products, right-click to open the the popup menu: **Modify**. As in the **Parts list** module, the product characteristics window will appear.


7. Moving

Moving devices

In **Devices** preview mode, devices can be moved by simply clicking and dragging. The  sign indicates locations where you cannot place the device.

Modular devices can be freely moved along their row or from one row to another, provided there is sufficient space. This space can be temporarily freed up by moving devices to the workbench (left-hand pane of the preview window) or by creating a new row.

It is possible to move a power device, provided that a compatible position is available and that the support and faceplate are absolutely identical. It is also possible to create a new row for this device (see page 57).

If there are a number of enclosures, to move several devices in one row to another enclosure you must press the **Shift**  key on your keyboard at the same time as you move them. If you do not do this, you will move the whole enclosure.

■ Moving rows of devices

Using the same procedure as for moving devices, whole rows can be moved within an enclosure or from one enclosure to another.

To do this, select **Faceplate** preview mode. Click on the faceplate of the row to be moved and drag it.

! WARNING

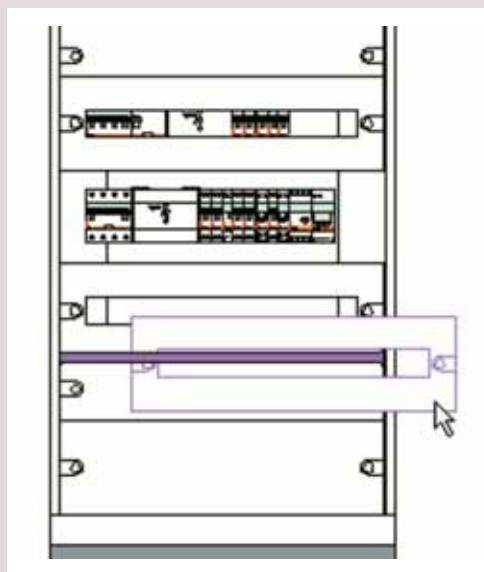
To avoid moving products accidentally, make sure you select the faceplate and not the devices below it.

If there are a number of enclosures and several products are to be moved, ensure you press the **Shift** ⌘ key before you make your selection.

+ TIP

The Del key can be used to send a row or an entire device directly to the workbench, without any risk of accidentally deleting them. Everything shown on the workbench belongs to the panel and appears in the overall parts list.

A coloured bar shows where the row will be inserted. The sign indicates that the row cannot be inserted at that point. To free up space temporarily, rows can be placed on the workbench. When a row is moved, the other rows of devices and the solid faceplates are readjusted automatically. When moving rows from one enclosure to another, if there is insufficient space available, the surplus row(s) are placed on the workbench.



■ Moving to a sleeve

There are a number of ways of moving the row from your DPX to a sleeve:

- By creating a new sleeve (see page 56) then dragging your whole row to it
- By changing the positioning of your row to in a sleeve
- Using the **Arrangement** module (see page 30)

Preview module

C. XL³ 800 and XL³ 4000

The popup menus provide some specific options for XL³ 800 and 4000 enclosures



■ Type of faceplate

This enables you to choose the faceplate type you want for the selected faceplate (1/4 turn or screw closing).

■ Types of faceplate on all the height

Same as before, but across the entire height of the selected enclosure.

■ Width of enclosure

By default your enclosure is configured to take 24 modules. You can however modify this to obtain more space with 36 modules.

This option does not appear when the enclosure contains an internal sleeve as the total width is already 36 modules (the 36 module option can also be selected in the Enclosures module).

■ Add internal sleeve

This option is only available for a 24 module enclosure (by default left sleeve).

■ Internal sleeves and external sleeves

Depending on the type of enclosure, the popup menu provides the necessary options for adding or deleting

an internal sleeve (inserted to the right) or external sleeves (joined to the right and/or left). Deletion is not possible when the sleeve is occupied by a busbar, a device or a side terminal block.

There is also a menu for reversing the internal sleeve (positioned on the right by default).

D. Busbars

! WARNING

Cabling products must only be created and modified after the enclosure has been fully defined, as XL PRO² resets your cabling products each time the enclosures are modified.

XL³ enclosures allow you to mount your cabling products as you wish in your panel.

1. Adjusting the length of the busbars

To adjust the busbars, go to **Chassis** or **Device** preview mode. The length of the bars is changed by dragging their ends with the mouse. XL PRO² then recalculates the length and defines the number of support required. The spacing between the supports is calculated automatically according to the peak Isc.

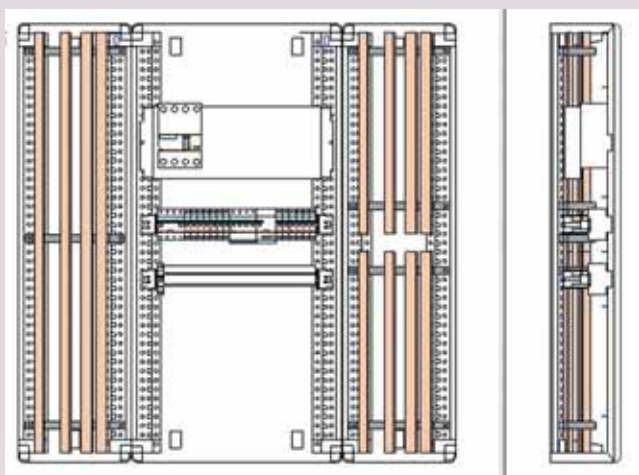
+ TIP

Only adjust the position of the supports after the bar length has been defined.

Any resizing of the bars automatically recalculates the supports.

2. Splitting busbars

Busbars can be split in two using the relevant option in the popup menu. Each part can then be moved and adjusted independently of the other, which makes it possible, for example, to extend a main vertical busbar into an adjacent box, or to change the position of a horizontal busbar between two cabinets (in the latter case, connect the two parts with a branch busbar). Once in place, each busbar can be split again.

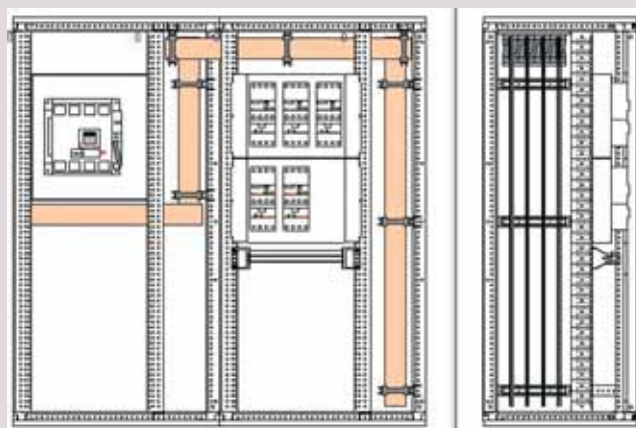


By splitting your busbar and adding a sleeve (see page 60) you can incorporate your split busbar.

Likewise, to delete the busbar, select it. It becomes red. Then press the **Del** key on your keyboard: the busbar is placed on the workbench. If you want to delete it altogether, re-select it on the workbench and press **Del** again.

3. Branch busbars

When the panel is fitted with a main horizontal busbar, branch busbars can be installed in an internal sleeve and an external sleeve by choosing the type and cross-section of the bars in the popup menu (**Set of branch busbars** option).



Summaries and Folder

The **Panel Summary** and **Project Summary** modules are used to draw up the purchase orders and provide the overall costing or costing per panel, based on your personal parameters. All the documents contained in the study can be printed out to make up the folder.

I. Panel summary

A. Introduction

The **Panel Summary** module has several tabs which display various summaries, the costing and the purchase order for your current panel.



1. Tabs

■ Equipment list

This tab displays a complete list of the catalogue numbers contained in the panel. Factory-assembled devices, such as supply inverters, are displayed on a single line under one catalogue number. To display the details, select the line.

■ Equipment costing

The **Equipment costing** tab can be made up of two windows:

- One for **Legrand** equipment
- A second for additional equipment, if any is used (see page 88).

The **Rate U.P.** column gives the unit price of each catalogue number based on the **Legrand** price list included in XL PRO².

The **Net U.P.** column shows the unit price for each catalogue number after deduction of the overall discount which must be entered in the **Discount** field below the table.

Each net price can also be modified individually by double-clicking on the corresponding line. Any prices changed in this way are shown in red. These changes can be cancelled by clicking on the **Return to default costing** button.

The **Net total** of the **Legrand** equipment purchases is updated after each modification.

Summary - Equipment Costing					
Reference	Description	Quantity	Rate U.P.	Net U.P.	Net Total
006564	MCB DX C 4P 20A	7	91.1000	91.1000	637.70
009857	Mounting base DPX125 4P	2	72.5000	72.5000	145.00
009858	Mounting base DPX125 ELM 4P	2	83.5000	83.5000	167.00
020051	Blanking plates 24 modules	1	4.7300	4.7300	4.73
020107	Metallic XL ² 400 cabinet H1200	2	357.0000	357.0000	714.00
020188	Backplate XL-Part 400 height 1400	1	47.7000	47.7000	47.70
020201	Support+24 modules rail, fixed	1	14.2000	14.2000	14.20
020221	Mounting plate DPX 250/630 vertical central position	1	63.0000	63.0000	63.00
020257	Curved metallic transparent door H1200	2	163.0000	163.0000	326.00
020300	Metallic front plate 24 modules H 150	1	22.4000	22.4000	22.40
020310	Metallic front plate 24 modules H 300	3	35.6000	35.6000	106.80
020321	Metallic front plate DPX250/400 central position H400	1	49.8000	49.8000	49.80
020340	Metallic solid faceplate H50	2	14.0000	14.0000	28.00
020341	Metallic solid faceplate H100	1	20.9000	20.9000	20.90
020342	Metallic solid faceplate H150	1	23.6000	23.6000	23.60
020343	Metallic solid faceplate H200	1	28.5000	28.5000	28.50
020344	Metallic solid faceplate H300	1	40.5000	40.5000	40.50
025049	MCCB DPX 4P4D 125A 25KA	2	399.0000	399.0000	798.00
025538	MCCB DPX 4P4D 400A Thermal-Magnetic	1	2460.0000	2460.0000	2460.00
026013	Earth leakage mod 125 side-mtg	2	794.0000	794.0000	1588.00
037330	Copper bar Type C for XL-part 400A	4	82.3000	82.3000	329.20
037331	Single phase support for bars XL-part 400A	2	35.2000	35.2000	70.40
Return to default costing			Discount	0.00 %	Legrand equipment purch. net price 8277.23 €
(Rates for: 2007-01)					

Cabinet price

Summary - Cabinet Price

EQUIPMENT

Discount: 0.00 %

Legrand equipment purch. net price: 6277.23 €

Additional equipment net price: 0.00 €

Net equipment purchase: 6277.23 €

MATTER

Cable supplies: 0.00 %

Net total material purchase: 6277.23 €

Gross Margin: 0.00 %

Net sale of material: 6277.23 €

ESTIMATED LABOUR

Lab. units: in hundredth(s) of an hour: 5.00

Labour estimate: in hour(s): 0.00

Hourly Rate: 30.00 €

Labour costs: 240.00 €

Transport: 0.00 €

Cabinet net price excl. of taxes: 8517.23 €

Equipment List | Equipment Costing | **Cabinet Price** | Purchase Order | Technical Summary (Rates for 2007-01)

The **Net price** of the enclosure is calculated according to your own criteria.

The **Discount** shown is that entered in the Equipment costing tab, and can be modified.

The **Total net price** of any additional equipment is calculated automatically using the prices entered for these devices.

For **Cable supplies**, a percentage of the net equipment purchase price must be entered.

The **Gross margin** must also be entered in order to calculate the **equipment sale price**, to which **Transport costs** may be added.

To estimate the labour required, XL PRO² uses a method based on **Labour units**: or Lab. units. One Lab. unit is equivalent to the time required for a 4 mm² connection, expressed in hundredths of an hour. This value is estimated on average at 5 hundredths of an hour, but it should be adjusted in accordance with your own experience.

XL PRO² determines the number of Lab. units for each device, based on its number of poles and its rating. It then calculates the total labour cost based on the hourly rate that has been entered.

Examples:

4P 16 A modular device = 4 Lab. units

DPX 4 P 160 A MCB = 12 Lab. units

! WARNING

You can modify the default “Cable supplies” and “Estimated labour” data. Modified boxes are shown in red.

0.00 % 75 €

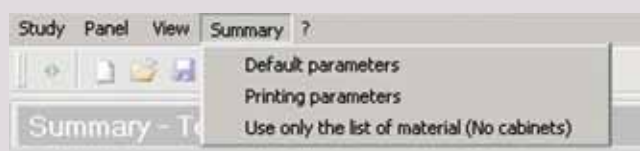
To return to the default values, click on .

Summary - Technical Summary	
Form:	Form 1
Enclosure type:	Cofinet XL ³ 400 métallique
Enclosure dimensions:	[1200x1150x200]
Enclosure IP:	40[8]
Breaking capacity:	25kA in 400/230V
Number of modules available:	24
Module reserve:	100.00%
Reserve not equipped:	23.91%
Comments:	

Description

- Number of enclosures : 2
- [-] Cabinet n° 1
 - Category number(s) : 020107
 - Dimensions (h x w x d) : 1200 x 575 x 200
 - [+] Faceplate frame
 - [+] Door
- [-] Cabinet n° 2
 - Category number(s) : 020107
 - Dimensions (h x w x d) : 1200 x 575 x 200
 - [+] Faceplate frame
 - [+] Door

2. Summary menu



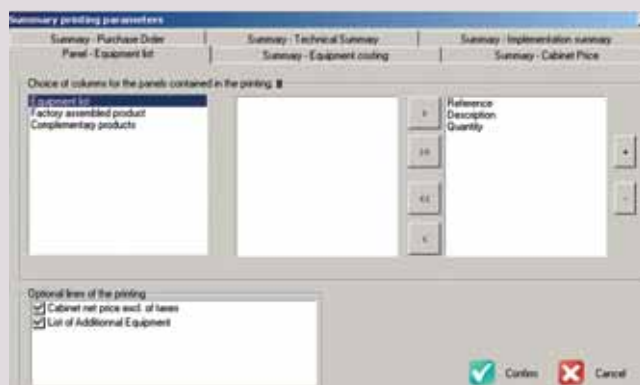
■ Default parameters



Here you can set the parameters for your current panel and for subsequent panels, for the following variables:







Discount, Lab. units, Cable supplies, Gross Margin, Hourly Rate and Transport.

■ Printing parameters





Choosing columns for the tables

This window is used to select the data you want to show when printing all the tabs, and the order in which you want it to appear.

The fields selected are located in the right-hand part of the window in the respective tabs. Use the  and  buttons to move the fields from one side to the other. The  and  buttons move all the fields at once. The  and  arrows to the right of the window are used to change the order by moving the selected field up or down. Confirm the printing options by clicking on **Confirm**.

Optional printing lines

Depending on the selected tab, these are used to select  or not select  a type of information for printing. This function enables you to make certain information public.

! WARNING

When you print your purchase order, the following will be produced:

- A purchase order for the Legrand equipment list
- A purchase order specific to your factory-assembled products
- A purchase order specific to the additional equipment. These two specific purchase orders are only produced if they have been selected in the printing parameters.

Summaries and Folder




■ Only use the parts list (not enclosures)

This menu is very useful if you want to order products with no enclosure. The enclosures and products specific to the enclosure are thus removed from the summary.

+ TIP

You can achieve the same result by not using the enclosures module.

+ TIP

You can export all or part of your Summary using the  icon. You can choose between text or CSV format.

II. Project summary

A. Introduction to the module

The **Project Summary** gives an overall view of your study. All your panels are grouped together, so that you can draw up costings for your whole study, rather than panel by panel.



1. Tabs

■ Panel list

This tab provides a dynamic summary of the variable data in the **Cabinet price** tab on page 63, in the form of vertical columns. Each horizontal line corresponds to one of the panels in your study. In the top part, only the **Lab. units** column can be modified. You can modify the variable data in the bottom part. The modifications will only affect the panels in the current study.

In the transport block you can select either **Project Total** which adds together all the transport prices for each of the panels, or **Global Fixed Price** which will be a global sum allocated to transport. A **timing** box tells you the number of deliveries. You will also find this information in your commercial summary.

Summary Study - Panel list

Panel	Rate Total	Net Purch. Equipment Leg Total	Total Net Equipment Complem.	Net Total Matter	Provides Wiring	Total Purchase Matter	Margin Gross	Sale Total Matter	Unit labour	Total Hour
Nouveau tableau 1	3681.37	3681.37	0.00	3681.37	0.00	3681.37	0.00	3681.37	5.00	8
Nouveau tableau 2	8277.23	8277.23	0.00	8277.23	0.00	8277.23	0.00	8277.23	5.00	8
Total =	11958.60			11958.60	0.00%		0.00%		5.00	16

Variable data

Discount Legrand Equipment: 0.00 %

Wiring Supplies: 0.00 %

Gross margin: 0.00 %

Labour units (in 1/100 of an h): 1.00

Hourly Rate (€): 30.00

Transport: ☒ Total Study, ☐ Total Fixed price, ☐ Timephasing

Net price study excl. of taxes: ☐

Panel list | Equipment list | Legrand equipment costing | Purchase order | Commercial summary

Legrand 2011-2017 - French version 2.5.0.3 (34 - English) - Ready

Summaries and Folder

! WARNING

The Project Summary module can highlight a problem concerning your choice of enclosure. Click on the arrow to find out which panel(s) are affected so that you can make the necessary modifications.

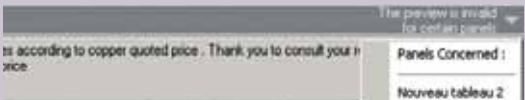
There are several possible causes:

- You have left products on the workbench



- You have not been to the Enclosures module

- Or XL PRO² has not found an enclosure to house your products



The banner indicates “the preview for certain panels is invalid”. Click on the arrow to find out which panel is affected.



In the Preview module a red “invalid” block indicates that your enclosure is invalid. You must go back to the Enclosures module to update the products.

■ Equipment list

This tab gives you a summary of the complete list of products in your study. The total quantity of each product and its catalogue number are given. All factory-assembled equipment is grouped together under one heading. To find out the specific composition of the product, click on in the left-hand column.

Reference	Quantity	Designation
003723	1	Light sensitive switch 1 function
004056	2	Power contactor 2P
004702	1	Time-lag switch 16A 230V
004771	1	Multifunctional digital timer 231AA
004844	1	Neutral terminal unit 12 outputs
004885	2	Modular Data unit 4P 40A
006017	5	MCB C63 C 1P+N 16A
006018	5	MCB C63 C 1P+N 16A
006064	7	MCB C63 C 4P 20A
007980	1	RCBO 303mA AC Type C63 C 4P 32A
008013	1	RCBO 30mA Type AC C63 C 4P 40A
008857	2	Mounting base DFX125 4P
008958	2	Mounting base DFX125 ELM 4P
009051	2	Blanking plates 24 modules
009108	1	Metallic 16 x 400 cabinet H1500
009200	3	Support 24 modules rail, fixed
009204	1	Universal rail
009222	1	Mounting plate DFX 250/630 with arial vertical ELM
009258	1	Curved metallic transparent door H1500
009300	3	Metallic front plate 24 modules H 150
009322	1	Metallic front plate DFX250/630 ELM H600

■ Legrand equipment costing

The **Equipment costing** tab gives a list of the equipment with the Unit Prices, Net Unit Prices and the Net Total (see page 62).

A separate block gives you the same information for your additional products.

Summary Study - Legrand equipment costing

Reference whose price varies according to the copper quoted price. Thank you to consult your regional agency Legrand or the site external Legrand to know the last applicable price

Reference	Désignation	Quantity	Rate P.U.	Net P.U.	Total Net
003723	Light sensitive switch 1 function	1	121.0000	121.0000	121.00
004056	Power contactor -2P	2	55.6000	55.6000	111.20
004702	Time-lag switch 16A 230V	1	49.8000	49.8000	49.80
004771	Multi-functional digital timer 230V	1	157.0000	157.0000	157.00
004844	Neutral terminal unit 12 outputs	1	7.5700	7.5700	7.57
004885	Modular Distrib. unit 4P 40A	2	28.5000	28.5000	57.00
006017	MCB DMC C 1P+N 25A	5	15.3000	15.3000	76.50
006019	MCB DMC C 1P+N 32A	5	15.3000	15.3000	76.50
006564	MCB DMC C 4P 20A	7	91.1000	91.1000	637.70
007980	RCBO 300mA AC Type DR C 4P 32A	1	254.0000	254.0000	254.00
008013	RCBO 30mA Type AC DR C 4P 40A	1	364.0000	364.0000	364.00
009857	Mounting base DMC125 4P	2	72.5000	72.5000	145.00
009858	Mounting base DMC125 63H 4P	2	83.5000	83.5000	167.00
020053	Blanking plates 24 modules	2	4.7300	4.7300	9.46
020108	Metallic XL 400 cabinet H1500	1	431.0000	431.0000	431.00
020201	Support +24 modules rail, fixed	3	14.2000	14.2000	42.60
020204	Universal rail	1	9.8700	9.8700	9.87
020222	Mounting plate DMC 250x50 with oval vertica	1	67.1000	67.1000	67.10

Legend equipment purch. net price **2263.55 €**

Panel list Equipment list Legrand equipment costing Purchase order Commercial summary (Rates for : 2007-01)

■ Purchase order

(see page 64)

Summary Study - Purchase order

Reference whose price varies according to the copper quoted price. Thank you to consult your regional agency Legrand or the site external Legrand to know the last applicable price

Reference	Désignation	Quantity	Rate P.U.	Net P.U.	Total Net
003723	Light sensitive switch 1 function	1	121.0000	121.0000	121.00
004056	Power contactor -2P	2	55.6000	55.6000	111.20
004702	Time-lag switch 16A 230V	1	49.8000	49.8000	49.80
004771	Multi-functional digital timer 230V	1	157.0000	157.0000	157.00
004844	Neutral terminal unit 12 outputs	1	7.5700	7.5700	7.57
004885	Modular Distrib. unit 4P 40A	2	28.5000	28.5000	57.00
006017	MCB DMC C 1P+N 25A	5	15.3000	15.3000	76.50
006019	MCB DMC C 1P+N 32A	5	15.3000	15.3000	76.50
006564	MCB DMC C 4P 20A	7	91.1000	91.1000	637.70
007980	RCBO 300mA AC Type DR C 4P 32A	1	254.0000	254.0000	254.00
008013	RCBO 30mA Type AC DR C 4P 40A	1	364.0000	364.0000	364.00
009857	Mounting base DMC125 4P	2	72.5000	72.5000	145.00
009858	Mounting base DMC125 63H 4P	2	83.5000	83.5000	167.00
020053	Blanking plates 24 modules	2	4.7300	4.7300	9.46
020108	Metallic XL 400 cabinet H1500	1	431.0000	431.0000	431.00
020201	Support +24 modules rail, fixed	3	14.2000	14.2000	42.60
020204	Universal rail	1	9.8700	9.8700	9.87

Return to the purchase order by default

Total **2263.55 €**

Panel list Equipment list Legrand equipment costing Purchase order Commercial summary (Rates for : 2007-01)

■ Commercial summary

This tab provides the whole of your study in the form of a simple summary (for viewing only).

Summary Study - Commercial summary

This study comprises references whose price varies according to copper quoted price. Thank you to consult your regional agency Legrand or the external site Legrand to know the last applicable price

Rate total	2263.55 €
Number of panels	2
Total Net Legrand Equipment	2263.55 €
Total Net Other Equipments	0.00 €
Total Equipment	2263.55 €
Total Supplies of Wiring	0.00 €
Total Material Purchase	2263.55 €
Total Gross margin	0.00 €
Total Sale Equipment	2263.55 €
Total Hours	21.00
Total Estimated labour	630.00 €
Total Transport	0.00 €
Net price study excl. of taxes	2263.55 €

Variable data

Discount Legrand Equipment **10.0 %**

Wiring Supplies **0.00 %**

Gross margin **0.00 %**

Labour units (in 1/100 of an hour) **5.00**

Hourly Rate **30.00 €**

Panel list Equipment list Legrand equipment costing Purchase order Commercial summary (Rates for : 2007-01)

2. Project Summary menu

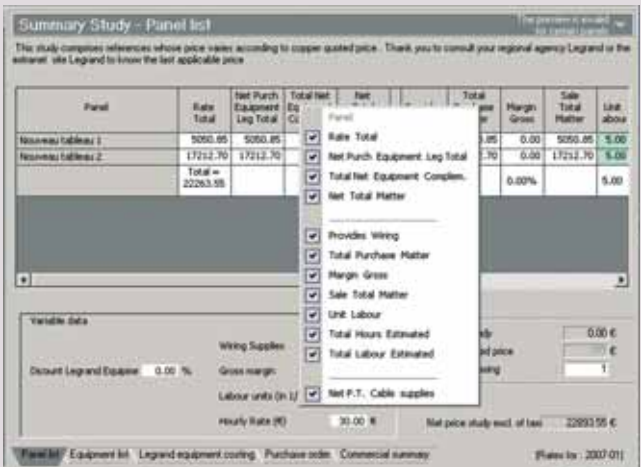
(see page 65)

Summaries and Folder

B. Modifications

1. Configuring the list of panels


In the **Panel list** tab, you can select or deselect the columns to be printed or not printed by right-clicking on any column.



+ TIP

If you have a large number of columns to select or deselect, it is preferable to use Project Summary > Printing parameters, as in the Summary module.

2. Export

Click on  in the menu bar to export all or part of your Project Summary.
There are two possible formats: text or CSV.

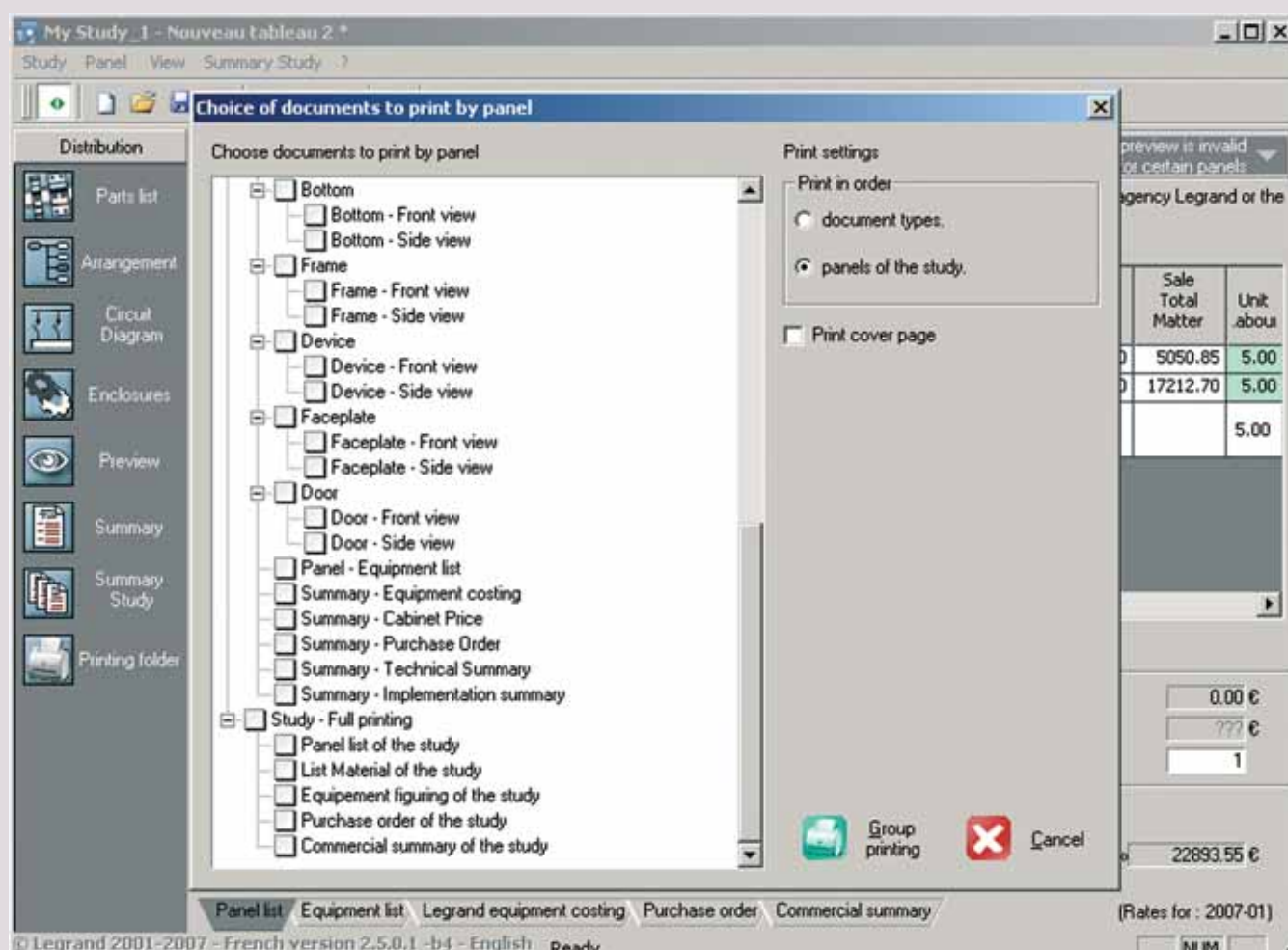
+ TIP

This option is also available in the Summary module.

III. Printing Folder

The **Printing folder** module is used for grouped printing of the documents which make up the study. First select the required printing order (by document type, or in the order of the panels in the study: panel by panel), then tick the documents to be printed.

The **Study summary** option is used to print the overall **Parts list** for the study, for all the panels, according to the printing options selected in the **Project summary** module.



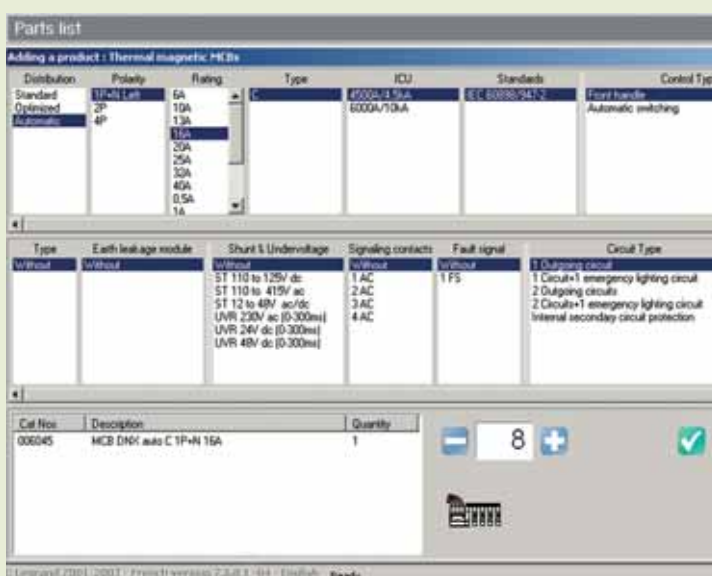
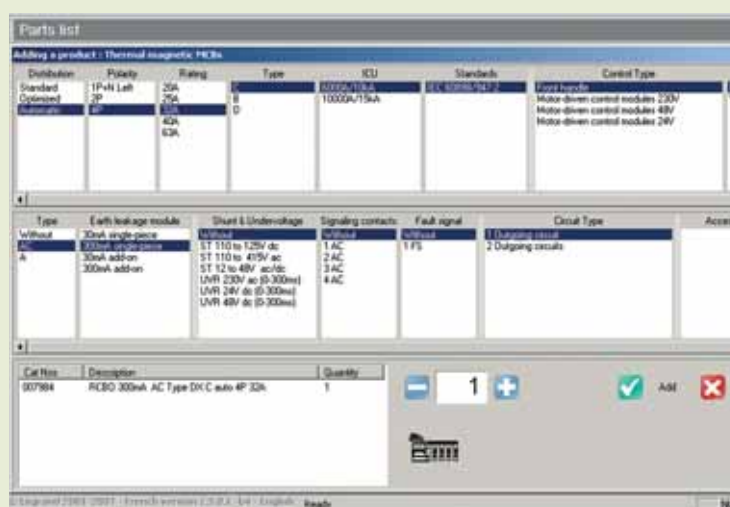
Automatic terminals⁽¹⁾

Choosing Lexic auto terminals distribution assumes a usage rule:

- One supplying product (head of row devices, head of circuit group devices, etc),
- Several supplied products (MCBs, etc).

A. Choice of a Lexic auto terminals “supplying” device

A “supplying” device is always 2P or 4P polarity. It can be selected in **Parts list > Protection/Modular breaking**, in the **MCB**, **Modular isolating switches** or **RCCB** subfamilies.



B. Choice of Lexic auto terminals “supplied” devices

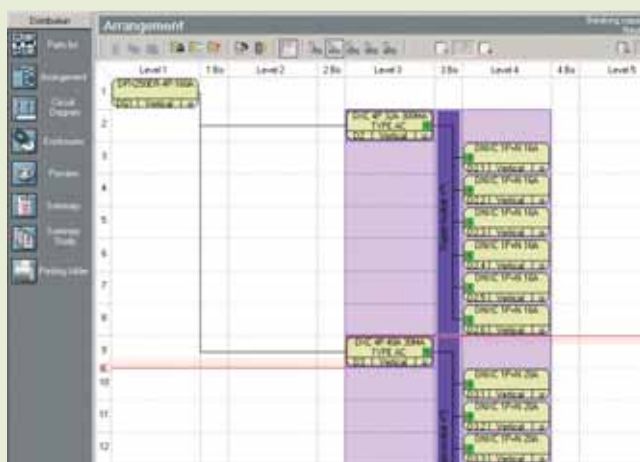
“Supplied devices” are always 1P + N polarity and can only be selected in **Parts list > Protection/Modular breaking > MCBs**.

+ TIP

You can modify products that have already been selected in your Parts list and convert them to Lexic auto terminals, taking care to comply with the characteristics mentioned above.

(1) depends on the product offer locally displayed

To help you quickly identify a Lexic auto terminals distribution, these products are coloured purple in the **Arrangement** module.

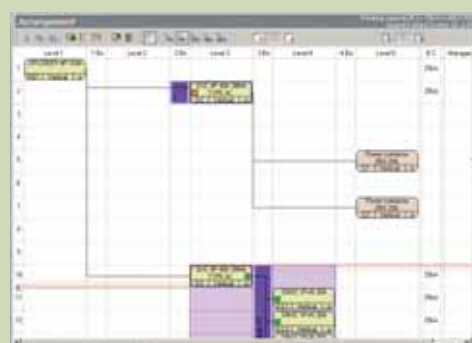


To help create Lexic auto terminals rows, the **Preview** module can be used to lengthen or shorten your Lexic auto supply busbars to suit your requirements. The supply busbars are adjusted to the number of modules available.

- If there is no “supplying” product:



- If there are no “supplied” products:



XL-Part⁽¹⁾

Optimised distribution covers power requirements up to 1600 A. It uses the XL Part system which concentrates the functions and offers pre-organised versions to optimise distribution. As with automatic distribution, there must be one “supplying” product and several “supplied” products.

A. XL-Part with MCCBs

Take a DMX 2500 as the main device, and an **MCCB** as the “supplying” device (**Parts list > Protection/Power breaking**).

To create an XL-Part optimised distribution, give your MCCB an **optimised connection, 4P**, rating **630 A**, **module mounted underneath**.

Then you will have a choice of two types of connection: on 800 A chassis or on 1600 A chassis.

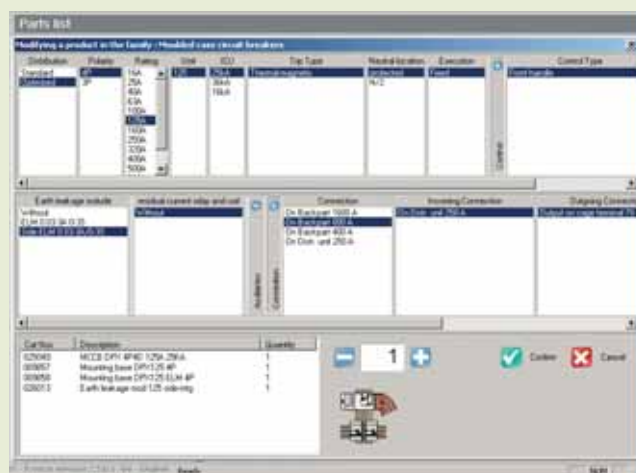
! WARNING

With the latter MCCB, you are only offered a connection on a 1600 A chassis. You must therefore modify the characteristics of the product to use it on the 800 A chassis.

EXAMPLE: Connection on 800 A chassis

The MCCB supplied by the DMX becomes the “supplying” product in your future XL-Part distribution. We will now choose the products that it will supply via the 800 A chassis.

- An MCCB: **optimised connection** rating **400 A**, **module mounted underneath**, on **800 A chassis** and **output on plates**. **Add/Close**.
- An MCCB: **optimised connection**, rating **250 A**, **module mounted underneath** and **output on plates**.



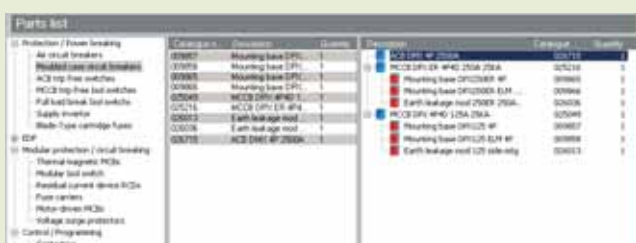
EXAMPLE: connection on 1600 A chassis.

In the same way select:

- An MCCB: **optimised connection, 4P**, rating **250 A**, Case **250 ER**, **Side-mounted** module, on **1600 A** chassis and **output on plates**. **Add/Close**.
- An MCCB: **optimised connection, 4P**, rating **125 A**, Case **125**, **side-mounted** module, on **1600 A** chassis and **output on terminals**. Quantity **2**. **Add/Close**.

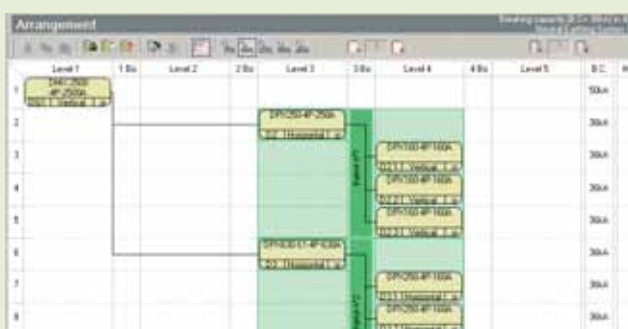
(1) depends on the product offer locally displayed.

1. In the Arrangement module



We can clearly see:

- Chassis 1, corresponding to the **800 A chassis**
- Chassis 2, corresponding to the **1600 A chassis**.

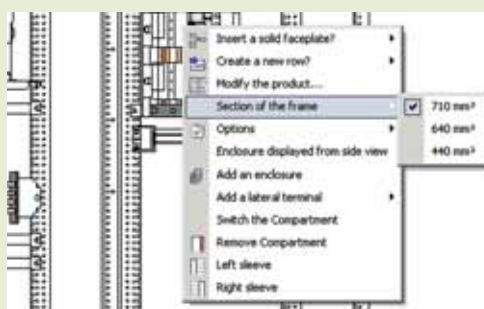


+ TIP

All your XL-Part distributions are coloured green in the Arrangement module so that they can be recognised easily.

2. In the Preview module

In the popup menu for one of the supplied products, a new option appears: the choice of the chassis cross-section.



+ TIP

When mounted under “normal” conditions (not as here with a DMX), the 800 A chassis enables you to use an XL³ 800 enclosure (see page 60).

XL-Part

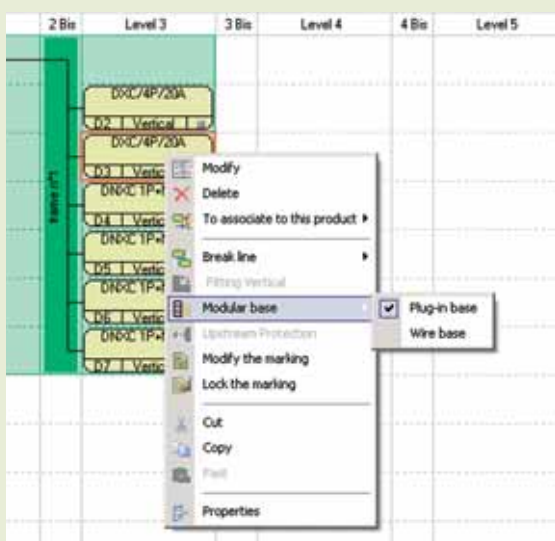
B. XL-Part with MCBs

You can also create an optimised distribution with **MCBs**.

To do this, select the following in **Parts list > Protection/Modular breaking**:

- An MCB: **optimised connection, 1P + N, 20 A**
- An MCB with **optimised connection, 4P, rating 20 A**
- Quantity **4. Add/Close**.

1. In the Arrangement module



In the popup menu for the MCBs, a new option appears: **Modular base**. Using this you can balance the phases and select **Plug-in base** or **Wire base**.

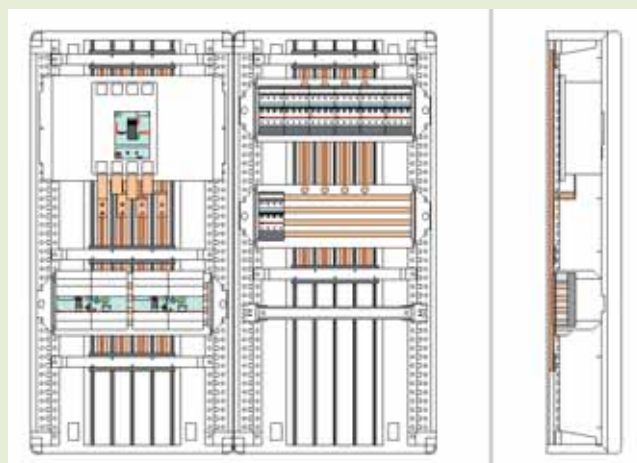
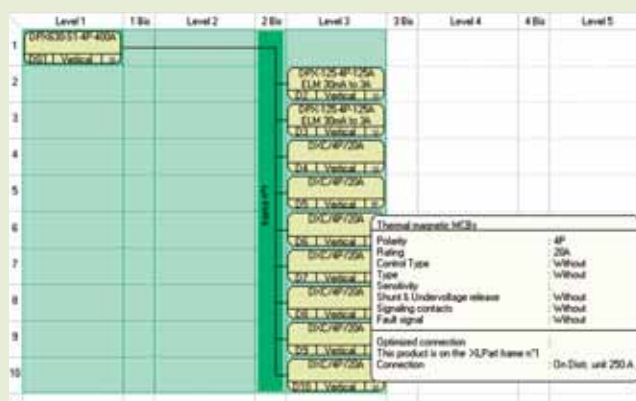
! WARNING

All the supplied products are mounted on a 250 A distribution block.

C. XL-Part in an XL³ 400

For this example we choose an **MCCB** as the main device, still with an **optimised connection** using XL-Part distribution, **400 A** rating on **400 A chassis**. This product will therefore supply the chassis and the supplied products. Let us select products that will be supplied by the 400 A chassis:

- **Two MCCBs, optimised connection, rating 125 A, side-mounted module on 400 A chassis**
- **Seven modular MCBs, optimised connection, 4P, 20 A, on 400 A chassis.**



Supply inverters

XL PRO² can be used to create supply inverters with:

- Air circuit breakers and switches
- Moulded case circuit breakers and switches

A supply inverter is added from the Parts list module, Protection/Power breaking family, supply inverter.

A. Open supply inverters

Step 1: Configuration of the supply inverter

The first step is used to define the general characteristics of the supply inverter:

- The required supply inverter **Configuration**: by default 2 devices, special inverters will be covered later
- The **Type**: Open
- The **Operation**: automatic or manual.

In manual mode you can choose between use of a handle or a motor

- **Normal device/Protected device**: the type of device for a normal circuit and for a protected circuit: circuit breaker or switch.



Additional characteristics are available for automatic operation.

- Voltage **Monitoring**: by default this is measured on the normal circuit and the protected circuit in PH/PH

! WARNING

By selecting PH/N voltage monitoring, you reduce the number of protection devices on the control circuit but the voltage displayed on the control unit is in PH/N.

- **Control voltage**: by default 24 V = protected
- The **Power of the protected supply**
- The **Command voltage**: by default 240 ~

+ TIP

Each characteristic that is selected adds products to the list of catalogue numbers.

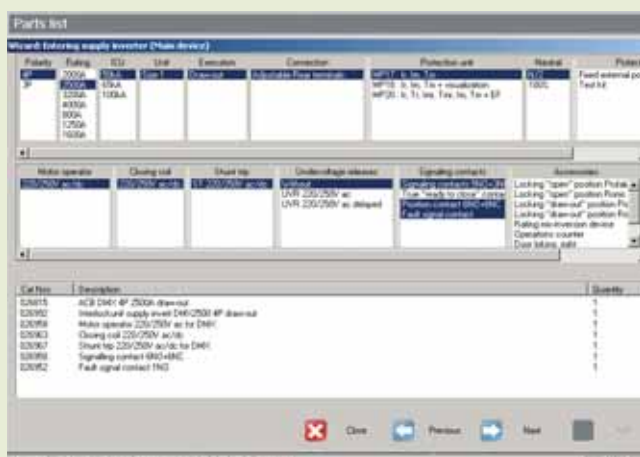
- Various options are also possible, such as:
- **Emergency stop**, by default deselected
 - **Group control**, only active for the 24 V = protected option in **Control voltage**

When all the options have been selected, click on the **Next** button.

Steps 2 and 3: “normal” and “protected” devices

These windows are used to select the characteristics of the devices themselves. The procedure is the same as for selecting a lone MCCB (see page 13), except that some options are forced according to the type of inverter defined in the previous step. To return to this selection, click on **Previous**.

The list displays the catalogue number of the device selected and any associated auxiliaries and accessories, some of which are automatically required to control the inverter. To continue, click on **Next**.



Step 4: Protection (automatic inverters only)

This window is used to determine the type of protection required for the control circuit of the inverter, and the prospective I_{sc} for the protected power supply.

The I_{sc} of the normal power supply is the same as that selected for the panel (see page 5). The devices necessary for protecting the controls are automatically added to the list.



Step 5: Summary

This window displays the complete list of catalogue numbers for the supply inverter and its control circuit.

If the panel has several identical inverters, adjust the quantity, then click on **Add**.



Supply inverters

In the active list in the **Parts list** module, all the connected products are grouped together under the catalogue number corresponding to the inverter.

This catalogue number includes the locking plate, the complete circuit breakers with any connection accessories and their auxiliaries, and for automatic inverters, motor-driven controls and the control box.

Other products for control of the inverter and for additional functions must be ordered separately.

Parts list			Comments	
	Part no.	Description	Qty	
Installation / P				
Air circuit	904005	Power indicator 2No/2No 250V ac 230V	2	Automatic installed case example
Modified	904010	Filtered stabilized power supply 12V of 10A	1	Added for interfacing assemblies
ACB trip F	007962	RICO 300k Type ACB D/C 4P 15A	2	ACB D190 4P 2000A down-out
HCB trip F	021151	Master automation control 1No	1	Interfurch supply invert DM
Pull out F	020875	Interfurch supply invert DM	1	Interfurch supply invert DM
Supply unit	020950	Signalling contact 4No/4No	2	Interfurch supply invert DM
Beats Trip	020951	Fail signal contact 1No	1	Closing coil 220/250V ac
	020952	Motor operator 120/250V ac for Cbdc	1	Shunt trip 220/250V ac
EEP	020953	Closing coil 220/250V ac/No	2	Signalling contact 4No/4No
Module panel	020957	Shunt trip 220/250V ac for Cbdc	2	Fail signal contact 1No
Control / Proc	020959	Interfurch supply invert DM/2000 4P	1	ACB D190 4P 2000A down-out
Control unit	020960	Cable for interfacing assemblies	1	Interfurch supply invert DM
Measurement	NI	Automatic installed case example	1	Motor operator 220/250V ac for
Power supply				Closing coil 220/250V ac
Power switch				Shunt trip 220/250V ac for
Safety panel				Signalling contact 4No/4No
Cabling/Proc				Fail signal contact 1No
Additional part				Filtered stabilized power supply 12V of 10A
				Standard automation control 1No
				Power indicator 2No/2No 250V ac 230V
				RICO 300k Type ACB D/C 4P 15A
				RICO 300k Type ACB D/C 4P 15A

B. Moulded case supply inverters

Moulded case inverters are selected using the same principle as that for supply inverters.

Step 1: Characteristics

WARNING

Each case has a corresponding execution type.


! WARNING

When motorised manual operation is selected, unlike air MCBs, the motorisation will change the mounting in the enclosures.

Ports list							
Mixed battery supply device (Thermoblock)							
Component	Type	Condition	Standard device	Secondary device	Qntd		
Device	Modelled case	Automatic	Circuit breaker	Circuit breaker	100		
	As circuit breaker	Manual	Switch	Switch	100		
		Manual (batteries)			1000		
<div>+</div>							
Voltage supervision	Control voltage	Power	Control voltage	Feedback	Emergency stop	Electronic control box	
Element	Modelled case	On	On	On	On	On	
(unit)	24V ac + 24V dc	10A	24V ac	with + remote without	Yes	1-8 digits	
	24V ac + 48V dc						
	24V ac						
<div>+</div>							
Call list	Description	Quantity					
020676	Firing device remote, modelled (level 3)	1					
024712	Filament stabilized power supply 12V at 50W	1					
026113	Standard automation control unit	1					
040055	Power contacts 24C-24E, 20A on 230V	1					

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Parts list						
(1) Description / Power %	(2) Manufacturer	(3) Description	(4) Quantity	(5) Equipment	(6) Description	(7) Quantity
AC (circuit breakers)	040070	Power protection 20kV and 25kV air 220kV	1	✓	Automatic shutdown case cover	040
Modular case oil	041710	Fixed oil-filled power switch 17kV oil 1st	1	✓	Feeding device inverter in ...	020676
ACB exp free oil	003962	RCBO 30kV type ACB 4P 100A	2	✓	RCB 10kV 40kV ACB 70A ...	020740
ACB exp free oil	020676	Feeding device inverter - modular 17kV 1st	1	✓	Feeding device inverter 210kV ...	020744
Full break ACB	020508	MCB 30kV 4P 400A Thermal magnetic	1	✓	Signaling in fault circuit	020646
Modular case oil	021540	MCB 10kV 4P 400A Thermal magnetic	1	✓	Signaling in fault circuit	020646
Modular case oil	020548	Motor starters 220V 3-phase	1	✓	RCB 10kV 40kV ACB 70A ...	020740
Basic type unit	021510	Standard in fault control	1	✓	Motor starters 220kV ...	020144
Exp	041710	Specialized automatic control	1	✓	Signaling in fault circuit	020646
Modular protection	041710	Automatic shutdown case cover	1	✓	Feeding device inverter ...	020676
Control / Programming					Standard automatic control	020676
Control and signaling					Power protector (RCB) 4P ...	040070
Measurement					RCBO 30kV type ACB 4P ...	003962
Power supplies					RCBO 30kV type ACB 4P ...	003962
Power supply						
Safety products						
Cabling Products						
Additional products						

 gives the details of the composition of the devices and associated products.

The two devices that make up the supply inverter are placed together in the same rectangle at level 2. All the control circuit products are represented by a single rectangle in the **Management products** column.

The screenshot shows the 'Arrangement' window of a digital audio workstation. The window is divided into five tracks, numbered 1 to 5. Tracks 1 and 2 are grouped under the heading 'Level 1' and '1 Bis'. Tracks 3 and 4 are grouped under 'Level 2' and '2 Bis'. Track 5 is under 'Level 3' and '3 Bis'. The tracks contain various audio and MIDI clips, including 'DPX630-S1-4P-630A', '30G1 Vertical', '30G2 Vertical', 'DPX-125-4P-125A', '03 Vertical', and '04 Vertical'. The interface includes a toolbar at the top with icons for various functions like solo, mute, and volume.

+ TIP

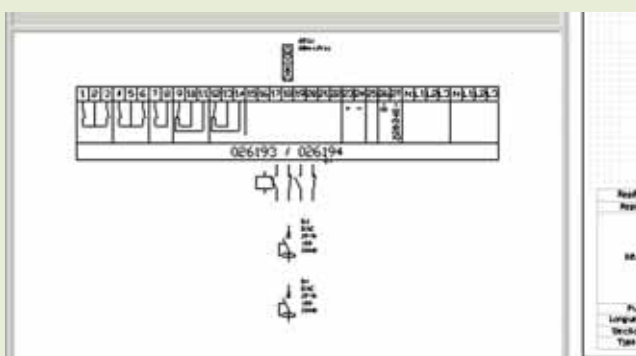
- The normal device is blue
- The protected device is purple

E. Representation in the Circuit Diagram module

Folio 1 concerns the power devices, while the last folio is specifically for the control diagram.



The control products are placed on the workbench.



You must draw the control diagram (see page 42).

F. Representation in the Enclosures module

The module will propose the various available enclosures, depending on the characteristics chosen for your associated products.

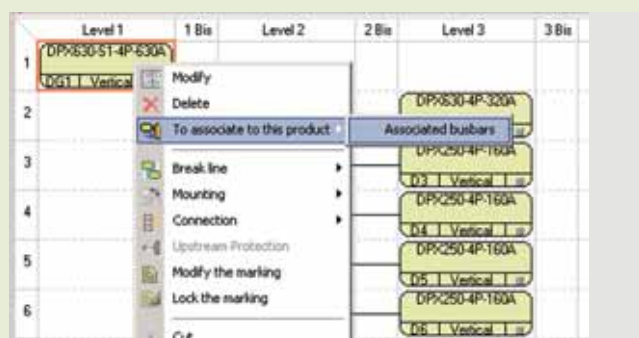
Forms of separation

A. Input data

To produce a study that includes forms, two mandatory pieces of information must be entered:

- The choice of product (DPX – DMX – DX)
- The associated busbar

A busbar can be associated with the main device either in the **"Parts list"** module (Cabling products > Assoc. busbars and distr. blocks) or in the **"Arrangement"** module (right-click on the MCB and select **"To associate to this product"** then **"Associated busbar"**).

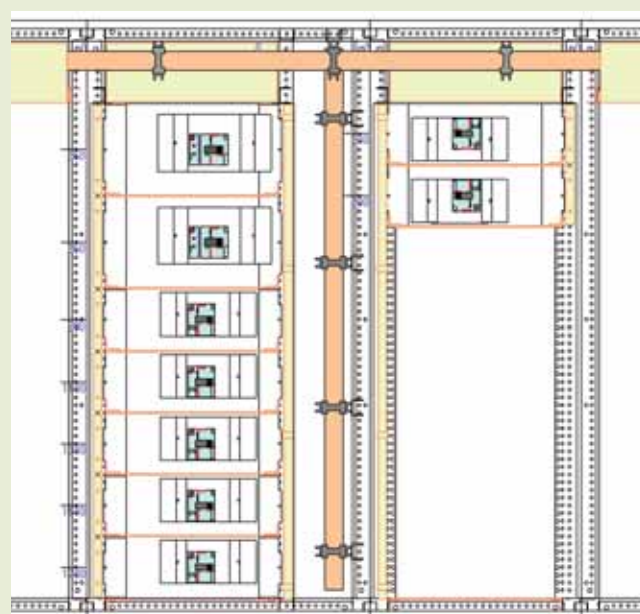


! WARNING

The busbar must be "top horizontal" or "side vertical" as these are the only distribution arrangements that can be partitioned in forms.

If the assembly consists of more than two enclosures, the vertical busbars will be automatically connected using a top horizontal busbar.

The horizontal busbar can be removed later if necessary.



XL-Pro² automatically creates branch busbars and the cable sleeves used to mount and connect them.

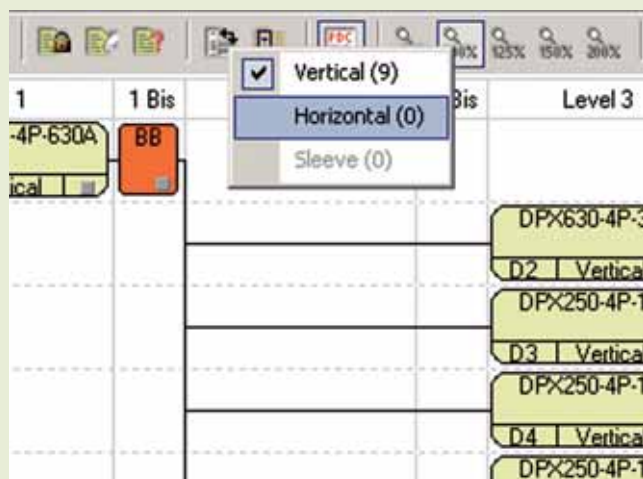


In the example above, the top horizontal busbar was eventually removed as it was not necessary to keep it.

B. Arrangement

Regardless of the level of form required, the reference position for DPXs is horizontal mounting. In the **“Arrangement”** window, select all the devices, then right-click to select **“Mounting”** then **“Horizontal”** (or click directly on the icon).

All of the devices selected will be transformed into horizontal mounting position (if this was not already the case).



If the DPXs are not positioned horizontally, XL-Pro² will do this automatically when the type of form is chosen, except in the case of supply inverters.

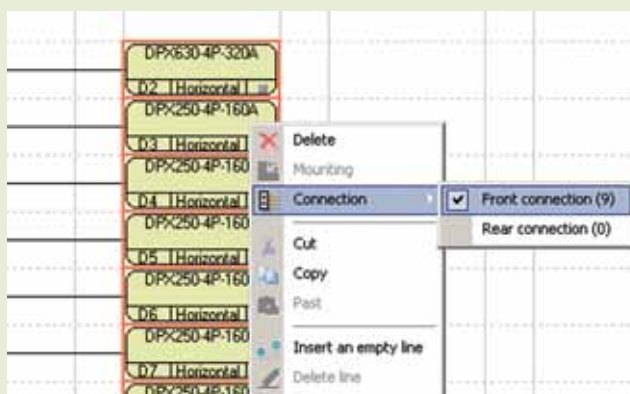
! WARNING

For horizontally mounted supply inverters, select the inverter in the **“Arrangement”** module and then right-click to select **“Inverter mounting”** then **“Horizontal”**.

Depending on the layout of the panel, select whether devices will be connected via front terminals or rear terminals.

In the **“Arrangement”** window, select all the devices then right-click to select **“Connection”** then **“Front terminals”** or **“Rear terminals”** (or click directly on the icon).

All of the devices selected will be transformed into front terminal or rear terminal connection depending on the choice made.

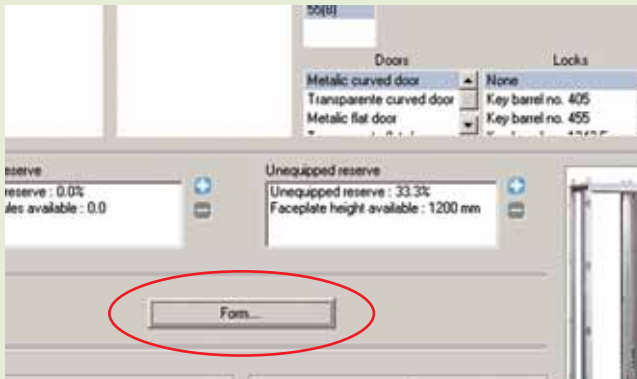


Forms of separation

C. Selecting enclosures

Products are selected in the same way as for a standard study.

In the “**Enclosures**” window click on the “**Forms...**” button. If the panel does not have any associated busbars, XL-Pro² suggests adding one.

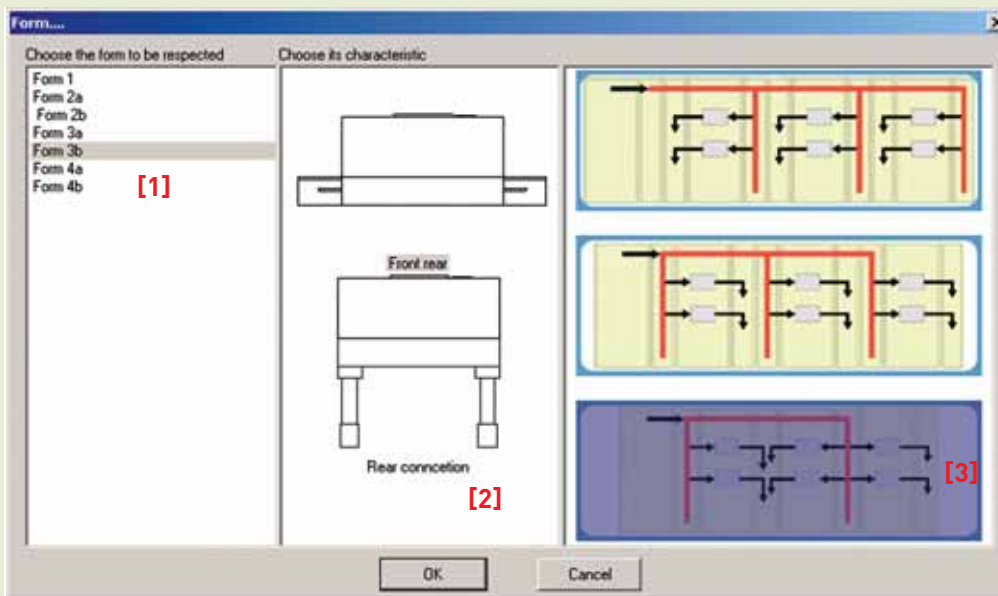


A window divided into 3 sections opens, allowing the user to select:

1. The level of form required [1]
2. The type of connection (front terminal or rear terminal) [2]
3. The circuit diagram (power supply from the right, left or a “head-to-tail” power supply) [3]

+ TIP

The “head-to-tail” circuit diagram is used to limit the number of branch busbars (and therefore the amount of copper used) but it requires alternate mounting of MCBs in the same enclosure assembly. In this case, the direction of opening must be clearly marked in order to ensure there is no ambiguity.



D. Preview

Once this information has been entered, XL-Pro² recalculates which enclosures are compatible.


If the message “No family accepts the products selected” appears, this means that a product is incompatible with the enclosure configurations used to create the level of form required.

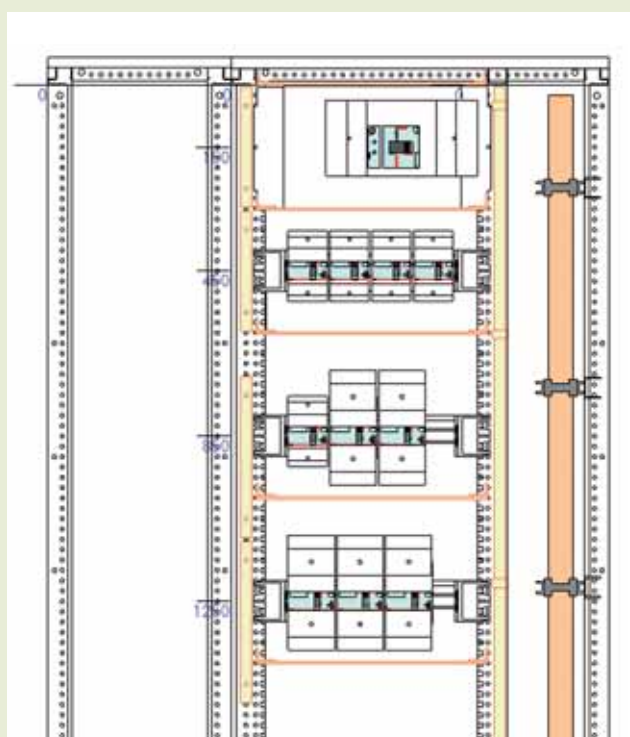
Example: technical impossibility of mounting a DPX-IS horizontally as mounting plates only exist for mounting in a vertical position.

For these specific cases concerning DPX-IS devices, it is advisable to use special plates and faceplates for vertical mounting, with connection on the front terminals, and to partition the space between the mounting plates using adjustable solid plates.

E. Vertical mounting of DPX 125 and 160

It is possible, subject to compliance with certain conditions, to group 3 or 4 DPX 125 or 160 together in the same functional unit (mounting on a plate or a rail).

By default, XL-Pro² groups DPX 125 and 160 MCBs on the same rail. It is however possible to separate each of these DPXs and revert to a standard configuration (1 DPX = 1 FU). To do this, select the relevant DPXs in the “**Arrangement**” window then click on “**Mounting**” then “**Horizontal**” (or click directly on the  icon). All of the devices selected will be transformed to horizontal mounting.

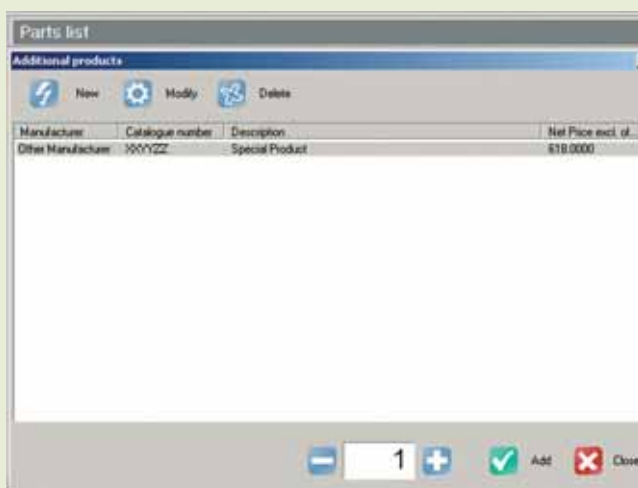


Additional products

The Additional products family is used to add other manufacturers' products to the panel. The list of additional products is initially empty. Before a product can be added to the panel, it must first be created by describing a number of its characteristics. It can then be used in all future studies. It is therefore possible to build a personal library of products, which is automatically saved and always available, even after XL PRO² has been updated.


A. Creating an additional product

In the list of product families, select **Additional products**.



In the window which appears, click on the **New** button then fill in the various fields in the dialogue box.

- The text entered in the **Description** field will be used in the **Parts list** module.
- The **Short description** and **Abbreviated description** fields will be used in the **Arrangement** and **Diagram** modules respectively.
- Specify whether it is a power or management product. This information influences the automatic arrangement (see page 20)

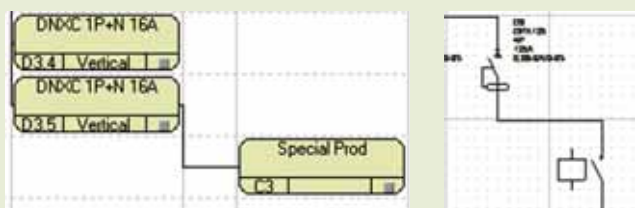
- It is essential to specify the number of modules for modular products, or the dimensions for other products, in order to define the enclosures.
- For non-modular devices, indicate the type of mounting: **Plate**, **Flush mounting**, **Already planned**. If the **Already planned** option is selected, no additional fixing device will be added to the Parts list.
- Information on estimated labour and the net price excl. of taxes is used by the **Summary** module (see page 62).
- **Type of marking** (modify using the list of marker letters).
- **Symbols**. One or more symbols corresponding to the additional product can be selected. The arrows are used to organise the order of the symbols. By default, additional products are represented in the diagram by a simple rectangle. It can be replaced by one of the symbols from the library by clicking on . This library will be enhanced in future upgrades.



B. Adding an additional product

Select the product from the list of additional products, then adjust the quantity required and click on **Add**.

The product is automatically integrated into the circuit diagram of the panel.



In the **Preview** module, the product represented by a geometric shape (square or rectangle) keeps to the dimensions that have been assigned to it. It acts and moves in the same way as any other product.

C. Changing an additional product

You can modify your additional product irrespective of the module you are in. Right-click, **Modify**. As for any other product, you open its characteristics window.

! WARNING

The default dimensions of a non-modular product are H: 100 mm, L: 100 mm and D: 100 mm.

The maximum dimensions are: H: 375 mm, L: 400 mm and D: 250 mm

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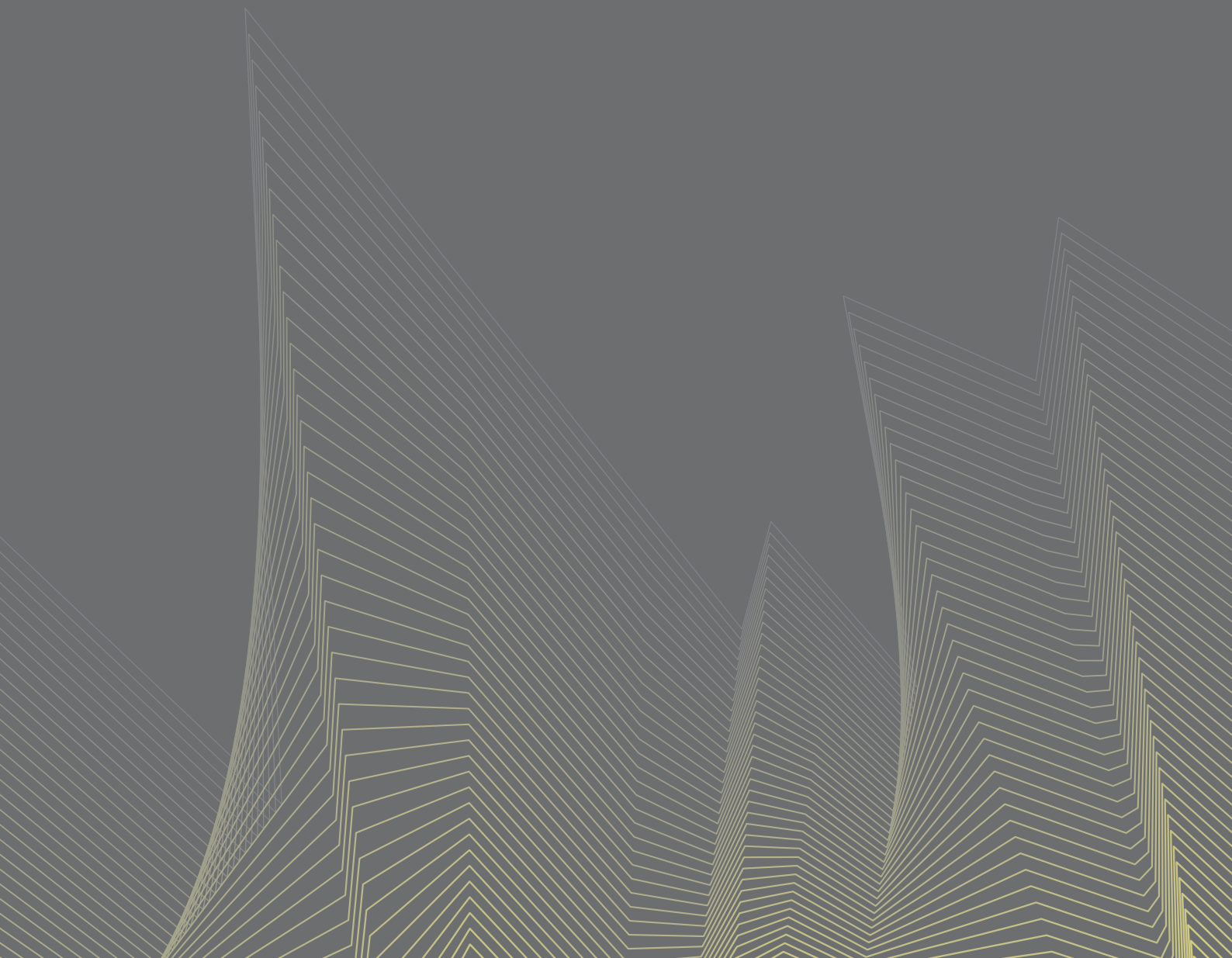
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P0710VLPR02En



Legrand Belgium s.a.

Kouterveldstraat, 9

1831 Diegem

Tel.: 02/719.17.11

Fax: 02/719.17.00